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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

5 cents a copy

Saturday, January 1, 1916

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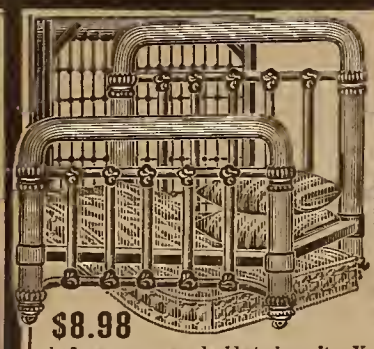

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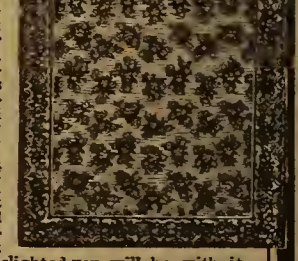

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FARM and FIRESIDE

—PUBLISHED BY—

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

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Vol. XXXIX. No. 7 SATURDAY, JANUARY 1, 1916 *Published Bi-Weekly*

Where $1 Brings Back $3

Fertilizers Increase Crops a Third on 1,300 Iowa Acres

By HARRY M. ZIEGLER

EVERY dollar spent for commercial fertilizers on the Iowa farms owned by John A. Cavanagh of Des Moines, his records show, returned the original investment and three other dollars in addition. Increased crops paid this unusual return, which is equal to 300 per cent interest on the money invested in commercial fertilizers.

"This does not mean that all a corn or a wheat belt farmer has to do," Mr. Cavanagh told me recently, "is to call in a fertilizer dealer, order $100, $300, $500, or $1,000 worth of fertilizer, and that fall reap from $300 to $3,000 in extra profits because of the use of the fertilizer. It is a far different story than that. Success is won through much study, tireless perseverance, and carefully directed efforts."

It was a long, steep, stony road Mr. Cavanagh traveled before he reached the top of the hill. He didn't receive much encouragement. And for three years, while he was trying to find the answer to his problem, he had nothing but expense for his trouble.

Then commercial fertilizers seemed to be the answer, and he used them on many of his 1,300 acres, valued at more than $200 an acre, near Rippey, Iowa. Now many farmers plan to use commercial fertilizers for the first time.

Commercial fertilizers and drainage have brought the average rentals from the 1,300 Cavanagh acres from less than $2 an acre to more than $10. Some years the rentals have been $12 and $14 an acre

Neighbors Vote Against Fertilizers

THE farm neighbors thought Mr. Cavanagh was making a big mistake to use commercial fertilizers on his Greene County acres. They knew he had always managed his farms as well as they managed theirs. They knew he was a successful banker in the largest city in Iowa. They knew he bore a reputation as a shrewd business man. But this one time they were certain he was wrong.

"Look here, John," they told him. "Iowa soil is rich enough to grow big crops without fertilizers. And even if it isn't, using commercial fertilizers is just like 'doping' a man. You have to keep it up all the time."

"I told them," Mr. Cavanagh said, "that they were right; that you do have to keep using fertilizer; but that you can't keep drawing on a bank account without depositing some money occasionally."

As a grain farmer Mr. Cavanagh had a twofold problem to meet. The upland acres of the Cavanagh farms are largely sandy loams, with some clay loams. The lowlands, spotted at that time with wet areas, consisted of three types—heavy humus, muck, and peat. The wet acres needed proper drainage, and the land that had been cropped continuously for forty years, with little or no rotation, required help. Because the farms were spotted with wet areas, it was necessary to tile them first so the fields could be worked to advantage.

The work of tiling the farms occupied three years. The job was finished in 1908. All of the work was done under the supervision of a drainage engineer, who drew the plans, wrote the specifications, and estimated the cost of the work. All this was done before a penny was spent on the drainage system. The completed work was satisfactory. All Mr. Cavanagh had to do was to pay the bills.

"To increase my knowledge of soils, I read many books on the subject," explained Mr. Cavanagh, "and I had soil chemists analyze the soils on my farms. I talked with fertilizer manufacturers and their salesmen at every opportunity. I had men who had studied and experimented with soils for years visit my farms and tell me what they thought I should do.

"Of course I knew, as every farmer knows, that nitrogen, potash, and phosphoric acid are soil elements needed by plant life, and that land deficient in any one of these three elements must have it supplied before good crops can be raised. But I wished to know why they were so essential, along with many other soil and crop questions."

It was not until 1912 that Mr. Cavanagh saw tangible results from his efforts. Three years had elapsed while he, the soil chemists, and the fertilizer manufacturers had been studying and experimenting with the problem.

A crop of flax was planted in 1909 on one 70-acre drained peat bog. The crop was a total failure, but it taught its lessons. The next year alsike clover was planted with a like result. Corn was planted on the tract in 1911. It grew fairly well until the latter part of July. When other corn was shooting, this corn began wilting, and not an ear of corn was produced.

The soil analysis showed that the wet lands didn't have enough potash to produce profitable crops, but that they contained enough nitrogen to grow 200 corn crops. This excess of nitrogen was shown in the rank growth and lack of strength in the crops. The crops were blown down easily. No grain was produced.

To correct this condition, 300 pounds of muriate of potash was applied to the acre in 1912. The potash was applied with a broadcast seeder just before planting the crop. The expense was $6.39 an acre. The corn on this field produced 65 bushels an acre. While the corn was soft and chaffy, and was discounted 5 cents a bushel, it was sold for 60 cents a bushel.

Here was a gross return of $39 an acre at an expense of $6.39 for fertilizer on land that hadn't produced anything before. And Mr. Cavanagh had been trying to raise something on it for three years. This crop return from the use of commercial fertilizer was much above the average for the 1,300 Cavanagh acres.

Corn was raised again on the 70-acre tract in 1913. One hundred and fifty pounds of acid phosphate was applied to the acre with a broadcast seeder. The expense was $1.72 an acre. The field averaged 60 bushels of corn to the acre. It was sold for 55 cents a bushel, a total of $33 an acre. The corn was damaged slightly by worms' working in the ends of the ears.

In preparation of the 1914 corn crop on this tract, 150 pounds of kainit was applied to the acre with a fertilizer drill. Kainit contains 12 per cent potash. The cost of the kainit was $1.30 an acre. The result was 65 bushels of corn to the acre. It is still in the cribs.

Frost Cut the 1915 Corn Crop

"THE corn on the 70-acre lowland experimental tract in 1915 would have yielded higher than any previous year, but much of it was in the roasting-ear stage when it was struck by a killing frost," A. E. Jensen of the Rippey Savings Bank told me when I visited the Cavanagh farms near Rippey recently. Mr. Jensen assists Mr. Cavanagh in the management of the farms.

While this is the history of one tract, nearly the same thing is true of all the tiled lowlands. The percentage of peat present determined the percentage of failures at first. Where there was little or no peat, crops were produced the first year after tiling.

"The high price of corn has had much to do with the exceptional money returns Mr. Cavanagh received from the use of fertilizer," explained Mr. Jensen, "but the investment would have proved a good one even if corn had been much lower in price. Now, owing to the European war, the price of potash has been increased four times, and there isn't much on the market at that price. We have enough on hand for the 1916 crop."

The battle won with the reclaimed swamp and low lands, Mr. Cavanagh started to work to make the worn-out uplands yield more profit. Cropped for forty years, with little or no rotation, the upland acres yielded 25 bushels of oats an acre in 1912. Other acres in the same township produced 35 and 40 bushels of oats. The upland corn yield was much below the average of Greene County.

Ninety upland acres were treated in 1913 with 125 pounds an acre of a mixture of two parts nitrogen, eight parts phosphoric acid, and two parts potash. The fertilizer was applied at a cost of $1.35 an acre. The result was 60 bushels an acre of No. 3 corn that was sold for 60 cents a bushel. Of this gross return of $36 an acre, $12, or 20 bushels of the 60, resulted from the use of the fertilizer. This 2-8-2 complete fertilizer was purchased ready-mixed, laid down at Rippey, at $21.25 a ton.

One hundred and eighty-four acres of upland planted in 1914 to corn was fertilized with 125 pounds an acre of the complete fertilizer. The three elements were bought separate, and were mixed at home. This cut the cost from $1.35 an acre to 87 cents.

The total mixture for the 184 acres included: [CONTINUED ON PAGE 13]

This drained field didn't produce anything for three years. Then muriate of potash and acid phosphate were applied. The result was a 65-bushel crop of corn

Twenty-Year Farm Loans

How Money is Borrowed for Long Terms; How it is Repaid

By FRED L. HOLMES

MICHAEL GORKY was forty-five years old, had a wife, nine children, and $400. This $400 represented his total savings, covering a period of eighteen years. He had been employed as a laborer at section work on one of the great railroads running out of Chicago.

His experiences in the city gave scant promise of a comfortable old age and held out to him little hope for feeding, clothing, and educating his nine children. He is a Pole by birth and came to the United States in 1892 from Galicia, now one of the principal battlefields in the European war.

From youth he had been accustomed to the strenuous life. In Galicia he had known the hardships and the rewards of pioneering. So when he read in a Polish paper of an opportunity to acquire land in northern Wisconsin he was not dismayed by the discovery that this home had to be carved out of the wilderness. He and his family wanted a home.

With only $400 saved in eighteen years and with middle age already upon him, he seemed forced to make a change. He answered the advertisement, and in 1910 bought forty acres of unimproved land near Conrath, Wisconsin, costing $640. He paid $50 down and reserved $350 for living expenses while he made a clearing.

The first year he built a log house, a log barn, cleared four acres of land, two for cultivation and two for pasture. He also bought a cow. He worked out by the day on an average of four months a year in order to earn sufficient funds to keep the family together and retain possession of his farm. At the close of the first year he paid $200 on the principal, but from 1911 to 1915 he was unable to make a payment on the principal, or even to meet the interest. It was hard sledding.

However, he managed to get along. At the end of five years he had ten acres cleared and in crops, ten additional acres in pasture, owned twelve head of cattle, four pigs, a cream separator, and other tools. He had built a second barn and a chicken house. He had many small debts and still owed $400 on his farm.

Meantime the legislature had authorized the formation of special associations to loan money to farmers. On April 24, 1915, Gorky applied to the land-mortgage association at Eau Claire for a loan of $600. An inventory of his property showed buildings valued at $400, live stock at $500, tools and machinery at $25, and the land at $1,200, making his total worth $2,125. The land-mortgage association made him a loan of $600, at 6 per cent interest, for a term of twenty years. With this loan he paid his entire indebtedness. Thus he gained an opportunity to proceed unhampered in the work of developing his farm for twenty years. Only small payments are required semi-annually.

Two land-mortgage associations operating in different sections in northern Wisconsin have loaned in two years of their existence something over a quarter of a million dollars in small amounts to over three hundred pioneers, to assist them in acquiring ownership of their farms. Some of the money has been used to purchase live stock, some of it to build houses, some to clear land, but most of it has been used to clean up all outstanding indebtedness—debts of the kind that harass and discourage the pioneer—chattel mortgages on cows, horses, and crops, liens on buildings, to say nothing of the original mortgage on the land itself. In most instances it has been the practice of the land-mortgage associations to advance sufficient money—if the security is good—to wipe out all such indebtedness and exchange the farmer's many small debts owed to many different persons for one large debt owed to a single corporation, and with twenty years with which to make the payment on the instalment plan.

Pays $43.26 Two Times a Year

A SEMI-ANNUAL payment of $43.26 in twenty years pays all the principal and interest at 6 per cent on a thousand-dollar loan.

The land-mortgage association plan has worked out satisfactorily in Wisconsin. It does not partake of philanthropy. It is based on that most primal of all business factors—self-interest. Formerly all that was necessary was to find the man with the grit to undertake the life of a pioneer. Now a land company not only has to find the pioneer but has to finance him.

Hence we have the land-mortgage association which in all its essentials is an adjunct to the land company. No city bank or investor will loan money directly to an unknown pioneer working in the wilderness hundreds of miles from the city. Nevertheless, that which cannot be done directly is accomplished indirectly through the organization of the land-mortgage association, which issues bonds to half the value of the land and sells the bonds to the city banks, and the city banks resell them to their customers. The city man does not know the pioneer, but every banker and every investor knows a bond. Nearly a quarter of a million dollars' worth of these bonds have been taken up by one bank in Milwaukee.

The underlying security, the mortgage on the land, is deposited with the state treasurer, accompanied with an abstract of title. The applicant for the loan makes a detailed statement of the use to be made of the money, answering forty-one questions touching upon his business affairs. His land is all appraised by a special committee of the association.

Since the issuance of these bonds is a phase of the banking business, these land-mortgage associations are subjected to the same regulation and control as now apply to incorporated banks.

Little wonder that the State after all these precautions should incorporate into law a provision declaring that these land-mortgage bonds "shall be a legal investment for saving associations, trust companies, or other financial institutions chartered under the laws of this State, and shall be a legal investment for trustees, executors, administrators, or custodians of public or private funds, or corporations, partnerships, or associations."

The conversion of these farm debts into bonds provides a means for a farmer to get a measure of the credit that is due him in the financial world for his labors on terms not dissimilar to those enjoyed by railroads and other industrial enterprises.

The land-mortgage plan recognizes the farmer as a business man in a business world. It gives him a credit rating.

Farm buildings such as these are made possible by the land-mortgage associations in northern Wisconsin. Three hundred pioneers have borrowed more than $250,000

Profit from Land

Does Watchful Waiting Pay Best?

By GEORGE HUGHES

FROM 1882 to 1907 I was a sort of cowman; that is to say, I put in my time watching cattle graze and sometimes die off in Texas and Kansas; also in buying, marketing, branding, and driving. In 1907 the old Texas range was selling from three to ten dollars per acre, stock cattle were selling where fat cattle used to sell, and the sort of cowmen like I was were dropping out of the cattle business.

I had made some easy money selling sections I owned on the old range, and I had also inherited some. I therefore leased out such land as I still owned and came to town, and got a job which helped some and did not overwork me. Then in my leisure I took to reading farm papers, books on agriculture, and the college bulletins. Presently scientific production of butter and eggs and pork and beef engrossed me. It got into my blood. One paper especially enlightened me on the nation's and the world's growing need of more food and raw material. This paper not only showed that there was a profit in up-to-date methods of producing two straws where only one had grown, but it also made it out to be a patriotic duty. It got me all right. I resigned my job. Then, knowing my cowman habits, I decided to be discreet, and so bought 65 acres only, and started in.

I bought this 65 acres in January, 1911. It had been rented, or the same thing, for twenty-five years. It was weedy, and it had never been plowed deeper than four inches. The improvements were five acres of poorly kept apple orchard, four acres of good alfalfa, buildings you almost had to support by hand when it blew hard, and osage hedge around—also some inside—the entire farm. I got a good man for common monthly wage, and paid him every thirty-first of December a per cent of the gross sum realized from sales of the farm produce for the year. Then I started in to build and concrete, put up a silo, got some good milch cows, some Duroc-Jersey sows and Plymouth Rock hens. Yes, I started in to make that 65 acres, assisted by the cows and sows and hens and papers and bulletins, plus intelligent labor, produce as much butter, eggs, pork, and beef as was possible. This was my patriotic ideal.

Of course I had read about soiling, feeding green stuff and concentrates in the barn to the cattle in the summer. I knew that soiling saved manure to put back intelligently on the land. I knew that when land cost over $50 per acre it could not be grazed. These things I had not been able to dispute. All the same, I was an old cowman, so they seemed like fairy tales cleverly written. Just think of sweating to cut and carry oats, and corn, and alfalfa into a barn when green grass was growing! Now, north of me were 80 acres of prairie grass, just as the Indians used to camp on it years ago. It had a barbed-wire fence of a kind around it, and a pretty good spring watered it. The owner did not live on it. He grazed a few cattle spring and fall and made prairie hay of the grass. I got his price on it, and found he asked within twenty dollars an acre of what I had paid for mine. He said—and I agreed—that it was virgin soil, and would therefore produce more, if broken up, than my worn-out 65 acres. But I had started in to be discreet, so I got to soiling my cows, and thereby learned that you can keep up the flow of milk in times of drought by soiling, but that it is not done by riding cow horses or talking trade.

In 1913 there was a drought, and 1914 found me with more cattle and a desire not to sell until I made those for sale heavier. Water was also a consideration. It looked to me as if I could pay the price for those 80 acres, break part of it up, and graze my dry young stuff on it. It looked like good business and in line with my plan. So I hunted up the owner, prepared to give the price.

But the price had grown $25 per acre in the interval. The owner pointed south to my alfalfa, well manured with a spreader, to my fodder, growing in land where green stuff had been plowed under eight or nine inches deep. The 80 acres could do the same or more, he said. Then he added that the road on the east was now a county road, and would be shortly graveled to the county line. Also, he said that of course I must know that the Topeka population had increased a good deal of late. There were more people needing food down there. Oh, yes, I admitted that if I were he I should certainly hold it until I could cash such productive improvements in farming as my neighbors proved a success—any road improvements and the growth in population. I left him with a great respect for him. I always found his word to be as good as a signed bond, and his character neighborly. But, somehow, I had no respect for myself as I rode off. It looked like I had become a "sucker" through reading what professors and editors wrote about productive effort, about making two straws grow where one did. I have got over it now. But did my mind lie as I rode away?

The gross income from beef and hay for a year from those 80 acres is about $400; in 1914 there was $1,300 worth of butter, eggs, pork, and beef sold from my 65 acres. About $800 of capital in cattle, machinery, labor, etc., would suffice to produce that $400 yearly income. To sell $1,300 worth of food products to the nation I would have had to put up over $3,000 in improvements, live stock, and concentrates.

Compares Taxes and Incomes

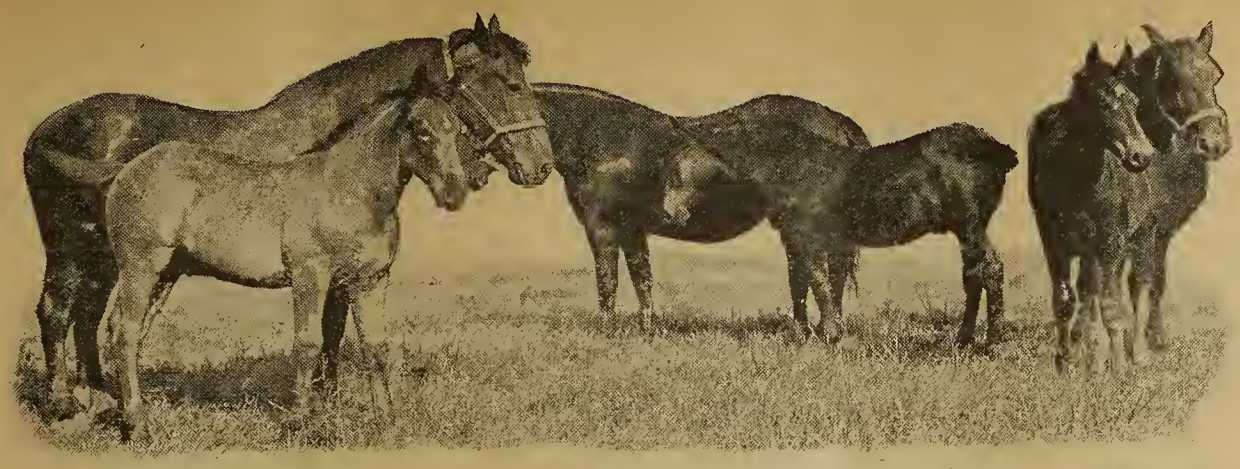
THE 80 acres pay in taxes $35 per annum; my 65 acres, improvements, live stock, and cash, which brain and muscle has made to furnish three times the amount of food, pay $65 per annum taxes. From the $400 gross income the owner of the 80 acres gets some cash himself every year, besides the rise due to my having proved some agricultural methods, the good-roads agitation having made good, babies having been born, and immigrants having come to Topeka. On the original cost, the additional capital, and my labor of brain and muscle, I have had, say, $20 per month in products for my own table. Oh, yes, I have had first-rate health, thank you, but the owner of the 80 acres is also pretty rugged.

Now, shrewd and sincere friends of mine advised me against the investment of the additional capital. They said gilt-edged securities at 5 per cent would beat it. Further, they said if I would sit still along with them, that to buy land in Florida, Texas, Colorado, any old place where population and the methods of industry were increasing in numbers and efficiency, would yield from 8 to 10 per cent per annum; and they have rubbed it in on me by proving it true. Soil, they say, is to rent or to sell, not to apply labor to, if you want to live and make a little money for a rainy day.

Now, I never heard from my authors upon this head. I cannot think that such able teachers of how to grow things think that taxing a man higher makes him produce more food from farm land, and invest more capital so as to do this efficiently. I cannot think that such good farmers as the colleges have at the institutes, and who write these things, believe that raising the price of other folks' half-used land by being industrious and trying to produce efficiently encourages production for the farmer who is still hoping for wages. Where is the flaw in my argument as I rode off, wrongfully cursing their eloquence and facts? That is the question. I want an answer from these men who have inspired me, my co-operators, as it were, in production—the professors, authors, and editors. The point cannot have passed their notice. Shall I ever get an answer?

E-W

As sheep make quick and cheap gains on cut-over lands, some of the money was used to buy sheep



Ponies, or colts of draft or partly draft breeding, may be trained to do tricks long before they are strong enough for breaking to harness. They are much easier to handle at this age

Teaching Horses Tricks

How to Get a Better Understanding with Dobbin's Colt

By DAVID BUFFUM

THE normal boy takes to the training of horses and dogs about as natnrally as a dnck takes to water. Following circns day, Dobbin, Dolly, Jerry, and Bess are often asked to perform an array of stnnts and tricks that fairly bewilder their unsophisticated, plodding senses.

The boys are by no means alone in their interest in trick-performing horses, either. Their sisters are captivated with the dainty stepping performers under the saddle, and by feat-achieving ponies guided by youngsters of their own age.

It is this always-present and irresistible interest in performing horses and horse-training that stimulates yonng minds to become more receptive to all educational influences.

In stndying the inclination and mental processes of the horses being trained, there is nnconsciously an expansion and development of the mental faculties of the youthfnl trainers, with a correspondingly better prospect for a well-balanced intellectuality in the future citizen resulting.

Expression of these views will help my readers to understand why I consider horse-training so important for country boys and girls, and my reason for working for a more general nse of horse-training as an edncational inflnence. By encouraging the training of horses by onr boys and girls I am confident there will be brought about a better realization of country-life advantages and delights.

Tricks Have Strong Appeal

WHEN I am called on to give a conrse of lectnres on horse-training and a practical demonstration of this art before classes in schools, I recommend the teaching of circus tricks to horses. These tricks have no valne in themselves except for exhibition horses; bnt the beneficial effect on the youthfnl trainer is greater because it has a stronger appeal than the training for ordinary harness and saddle use.

It was discovered by Darwin that the minds of animals differ from those of men in degree only. Hence love, hate, fear, jealousy—all our mental attributes, in fact, including reason—are present in the mind of the horse. But while the horse mind differs from ours only in degree, that degree is very great. Therefore, when we come to reasoning faculties we find that the horse reasons almost wholly from experience and practically not at all from observation.

Take a very simple instance. A horse may see his pasture gate fastened and nnfastened for weeks by a latch that he could easily nnfasten by a thrnst of his nose, yet he does not learn to let himself out. Why? Because he does not reason from observation.

A few horses do learn to nnfasten latches by themselves, so we know they do reason to some extent from observation. But their powers in this respect are so limited and found in so few horses that in training we leave this item entirely out of the reckoning and assume the horse reasons only from experience.

This, the first and most important law in eqnine nature, furnishes the key to all successfnl training. Bnt two supplementary laws are almost equally essential to understand. One is, the horse cannot be expected to learn mnch of human language. Yon must show him what yon want him to do in snch a way that he will know what you mean. The other is, the horse is usually perfectly willing to do what yon reqnire of him if he knows what it is. When rewarded for obedience he is more than willing—he is eager—to do yonr bidding.

To illnstrate these laws let us take the teaching of one of the simplest of tricks—to say "yes" and "no." You want your horse to nod his head for "yes" and to shake it for "no." How are you going to tell the horse this, for he cannot understand yonr langnage?

Have in your pocket some oats or sngar. Then standing by his shoulder prick him lightly on the breast with a pin. To relieve this discomfort he will bring down his nose to his breast as if an insect were biting him. This you accept as "yes," and at once reward him. Repeat nntil he will bring down his nose at the slightest movement of your hand toward his breast. Yon will be surprised at his quickness in learning the trick.

Your movements, when indicating to the horse what yon want of him, being wholly for the horse and not for yonr audience, should be made in snch a way that the latter will not notice them. This may take practice.

To make the horse say "no," prick him on the top of his neck and he will shake his head as if to dislodge an insect. Reward and repeat exactly as in teaching to say "yes" until he will say "no" at the slightest elevation of yonr hand.

In these tricks yon have found an easy way to make yonr horse understand yon. Now let us suppose that you want him to stand with his fore feet on an inverted tub. How are you going to show him what you want him to do?

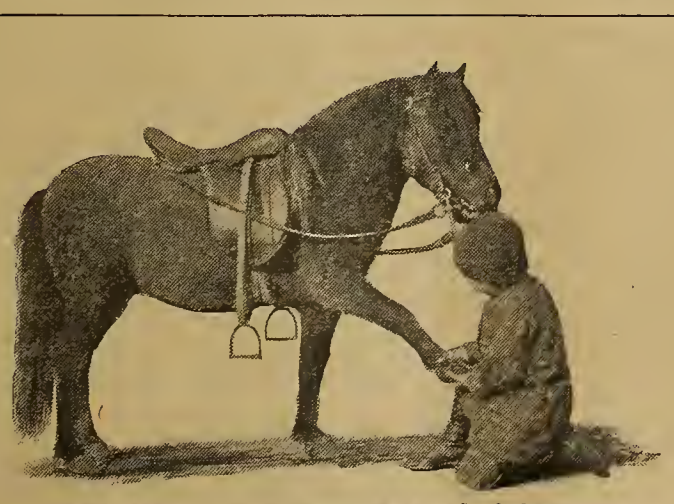
Clearly, there is bnt one way, and that is to take his feet one at a time and place them on the tnb. As soon as yon get him in this position, reward and caress him as long as he remains in the position wanted, but the moment he puts his feet to the ground withhold reward and show yonr displeasure by reprimanding with a slight slap of your hand. Then repeat, saying, "Stand on yonr tnb, sir," nntil he associates the act with the command. It is very easy working patiently and by degrees to finally get him to stand with all four of his feet on the tub and to stay there until yon call him off of the tub.

A colt or a pony will soon learn to stand on a box

By exactly the same means horses may be tanght more complex tricks, such as to stand on a plank and play seesaw; but this is more difficnlt, as they dislike the unstable thing on which they are reqnired to stand.

Take for instance the very simple trick of yonr horse's kissing you. All you have to do is to raise his nose to your face, then at once reward him. In a very short time he will anticipate your raising his nose by raising it himself. This trick gives the onlookers more pleasure because it appears more affectionate.

A stranger going up to caress a horse which my young son had taught a few tricks was surprised to see the animal bow a very polite "Good morning!" then shake his head violently, then proffer a kiss, and finally extend his foot to shake hands in the vain hope that he might stumble upon some trick that the unappreciative stranger would reward. "The horse was evidently trying to tell me something," said he, in perfect seriousness. "He mnst be a wonderfnlly intelligent animal."



Horses reason from experience instead of observation. This is why sugar gets results

I am often asked how to make a horse lie down at the word of command like a dog. It is as easy as any other trick, all that is necessary being to first lay him down, then reward and make much of him while in this position. Then repeat the lesson till he lies down of his own accord. Bnt I do not recommend this trick to the inexperienced, for the horse will struggle violently when being thrown. It is too dangerons a game for boys and girls to undertake and, while by no means hard to teach, makes no more show than the simpler tricks.

These examples should furnish the key to teaching your horse the tricks yon may desire to teach him.

Now I want to say a word about pnnishments. If, when your horse has learned a trick, he is inclined to be disobedient abont performing it, he may be pnnished by a slight blow from a little switch or riding whip—just enough to serve as a reprimand, but no more. Never pnnish severely, for if you do yon arouse the horse's temper and resentment and he is then in no condition to learn. This is important if you wonld make progress in horse-training. Remember that yon are dealing with an inferior intelligence, and that "fear or anger a good horseman never shows."

Nervous Horses Don't Learn Readily

THE best subjects for training are ponies, or colts of draft or partly draft breeding. Contrary to a very generally accepted notion, cold-blooded horses—if not lnnkheads—are just as intelligent as pure-breds, and learn more easily because of being less excitable. The different breeds of ponies are generally very bright and qnick to learn, and while some are too nervous and high-strnng, the majority make splendid trick animals. Bnt on most farms the draft or partly draft colt is more available, and there is no better or more intelligent trick horse anywhere. Colts may be trained to tricks long before they are strong enongh for breaking to harness, and at this age they are much easier to handle.

Just here I want to say a word to the teachers of rural schools. There are horses at the homes of all your pupils. Why not enconrage them to stndy and train the horses, perhaps even offering a prize for the best-trained colt? The wisdom of such a conrse cannot be doubted.

Do you think I am speaking by guesswork or without good and snfficient reasons in making these recommendations? It is very doubtfnl whether I would have remained on the farm had I not happened to be exceedingly fond of horses. The lure of the city was very strong for me, but I could not raise horses in the city, so I stayed on the farm.

My fondness for horses was inherent, bnt I soon found myself interested in sheep, which resulted in my becoming and remaining for more than twenty years an enthnsiastic breeder of Southdowns. Then I became interested in cattle, and bred Jerseys; then in poultry, which I bred for both feather and performance, and which I still keep in large numbers.

In the meantime, and qnite as a matter of course, I became interested in the plants that my flock and herds consumed, and in plant nature and plant reqnirements. Thus, by degrees and in the most natural way, I became so steeped in the atmosphere and associations of the conntry as to find in that environment my natural and fitting home—a home which I would not exchange for anything the city could offer to me in the way of a home.

In the main we are constrained to jndge others by onrselves. And I am snre that the conntry boy who grows up among animal pets, whether horses or otherwise, and is enconraged to study them and to familiarize himself with their natures and wants, and, as he grows older, to cultivate the same familiarity with other animals, will not only be far less likely to leave the farm but will be happier and better in the meantime.

Acquiring a Farm

By WM. L. CAVERT

THE qnestion is frequently raised as to whether, under presen conditions, it is possible for a young man with no capital but health and industry to acqnire a farm of his own. In Washington Connty, Minnesota, livcs James Blank, a yonng farmer whose experience should be an encouragement to other yonng farmers. But his real name isn't Blank.

This yonng farmer, leaving home and parents, came to this country from Sweden at seventeen years of age. For nine years he worked as a farm hand for the best farmers in the county. Practically all of the nine years were spent in the employ of two farmers. After nine years of apprenticeship as a farm hand, he had saved snfficient money so that he was able to bny a small farm equipment and rent a farm. As with many other yonng farmers, the time of changing from hired man to tenant was that of his marriage.

After three years he bought for $5,000 the 120-acre place which he was then farming as a tenant. Since buying the original place he has bought another 40 acres. Now he owns 160 acres, worth, with improvements, about $8,000, and farm eqnipment, in the way of live stock, feed, and machinery, worth $3,100. There is a $1,000 mortgage on the farm. Dedncting this, leaves the young farmer worth $10,100.

During the year of 1914 this farmer made $1,250 as his labor income. In other words, he had $1,250 for his own work above farm expenses, and five per cent interest on the investment of $11,100.

The secret of this young man's success seems to have been good health, good bnsiness judgment in manàging the farm bnsiness, frngal living, indnstry, and a knowledge of the most snccessfnl methods of handling crops and live stock as learned from snccessful farmers during his apprenticeship as a hired man.

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Hard, Sometimes, to Raise Children.

Children's taste is ofttimes more accurate, in selecting the right kind of food to fit the body, than that of adults. Nature works more accurately through the children.

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"One lucky day we tried Grape-Nuts. Well, you never saw a child eat with such a relish, and it did me good to see him. From that day on it seemed as though we could almost see him grow. He would eat Grape-Nuts for breakfast and supper, and I think he would have liked the food for dinner.

"The difference in his appearance is something wonderful.

"My husband had never fancied cereal foods of any kind, but he became very fond of Grape-Nuts and has been much improved in health since using it.

"We are now a healthy family and naturally believe in Grape-Nuts.

"A friend has two children who were formerly afflicted with rickets. I was satisfied that the disease was caused by lack of proper nourishment. The children showed it. So I urged her to use Grape-Nuts as an experiment and the result was almost magical.

"They continued the food and to-day both children are as well and strong as any children in this city, and, of course, my friend is a firm believer in Grape-Nuts for she has the evidence before her eyes every day." Name given by Postum Co., Battle Creek, Mich.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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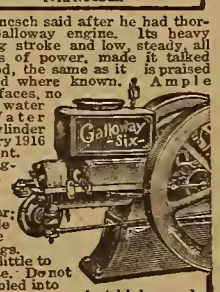

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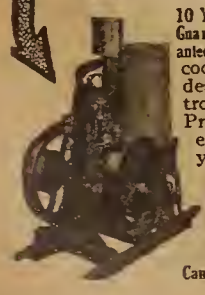

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The Editor's Letter

As a child, were you glad or sorry on "the first day of school?"

If you will answer that question I shall tell your childhood's attitude toward the every-day life you lived.

If you enjoyed the work of the farm; if you as a girl liked the housework and took an interest in it; if you as a boy were crazy to plow and harrow and make hay and take care of live stock—then you hated to have school open, unless you were inordinately fond of books.

But if you had a headache on washing day; if churning made your side ache; if you welcomed a shower which made it too wet to work in the field and felt wronged when the rain blew over or went around or followed off down the river, the way so many rains do—why, then, you were glad when the first day of school came, especially if you were even a little fond of books.

The life stood on one side of a line, school on the other. If you were fond of the life, you could get along without school. If you hated the life, you loved school, or at least embraced it, as giviug surcease from living the life.

But how would it have been if school had been an agency for getting knowledge out of life? What if your lessons in school had been just the separating of the stuck-together pages of every-day life and work, the cutting of the leaves of the volume of country living, so it conld be read as a whole with pleasure, with profit, and without missing the pictures?

Then the boy or girl fondest of work would have been gladdest to learn more about its hidden aspects, and would have been the prize pupil. The farm laggard would have been spurred to real interest in farm work by the pictures between the hitherto uncut pages of life.

I'm rambling, I fear. I started to comment on this letter which I have from Mr. M. L. Wardell, principal of the high school at Guymon, Oklahoma.

I have just finished reading your book, "The Brown Mouse." I feel that it is the book needed by the reading public, especially at this time. I like it very much indeed.

In your book I got the idea that you are an advocate of longer school terms, both for grades and the high school. For several reasons I am interested in longer school terms, possibly eleven instead of nine months. I should like very much to have your ideas concerning this, and if you should help me on this longer school-term proposition I shall appreciate it very much.

Why, dear people, the schools should never close down for more than a few days. We've too much invested in our schoolhouse—*and* our children—to allow the plant to stand idle. It is rauk waste.

Schools Begin at 6 A. M.

In Cook County, Illinois, I think it is fair to say, the schools are in full blast twelve months in the year. In Gary, Indiana, they open at about six or seven in the morning and run until ten or eleven at night. They *use* those schools.

The real school is a place where children read about life, write about life, cipher about life, and study the language, literature, history, physiology, geography, chemistry, physics, and bacteriology of life.

Many rural schools are now really in operation most of the year. If all the pupils became members of the school clubs, it would mean pretty nearly a twelve months' term, and not a bit of it taken from the productive work of the farm.

And, of course, it wouldn't be much of a school without a teacher—and the teacher would have to have twelve months' pay.

He should have, too—or, she, as the case may be.

It's bad enough that we have to hire so many tramps to do our farm work. It is a thousand times worse to have our school-teaching done by educational tramps. And yet, that is what we make of them. In the county in which I live it is almost the regular thing to change teachers every term.

This means that we act on the theory that a teacher's work doesn't need to be planned more than three months ahead.

It means that we are so blind as not to see that our best teachers are sent away before they really get acquainted with the individual needs of their pupils.

It rednces our teaching to the level of job work to be done by a higher sort of hobo.

There is no use in keeping the schools open the year around unless the school work is planned as a year-round matter, just as farming is planned. And that's just how the planning should be done.

A great deal of farm work ought to be done by the children in the schools. All the bookkeeping should be done there which cannot conveniently be done in the home. This would give the childreu good business educations. Much work in soil-testing, seed examination, and seed-testing for sprouting should be done in school. All the percentages should be there worked out as arithmetic lessons. The home helpfulness of the children should be rated as a part of the school work. There should be school home-garden, canning, pig, calf, and road-making clubs. All this needs the work of the teacher with the children every month in the year.

"Can our present teachers do such things?" I hear some doubting Thomas ask. Many of them cau, and some cannot. More of them than you think could if they were taught by the right sort of superintendents. But when we get the bigger job for the rural teacher, we shall get big people to do it—and they will get bigger pay, and we shall be glad to vote it for them.

For their work will be more truly productive than ours.

THE EDITOR.

Seeks Happiness First

By W. H. Brace

The refreshing letter that follows presents a combination domestic-business problem for young people to think over. It shows also that one of the first things necessary to get out of a rut is to recognize that you are in one.

THE rut that menaced our comfort and happiness in life was the idea that real comforts bordering on luxuries were not for us until we were able to retire from work. Also the idea that relaxation and pleasure were not for us until we had made our fortune, which I fondly imagined would be around the age of forty.

I started out in life by marrying the sweetest girl, barely seventeen years old—scarcely more than a child—and I was twenty-three. But I had this advantage: From the age of fourteen I had gone to dances, spelling schools, lyceums, parties, theaters—in fact, everything in the way of pleasure our neighborhood and town afforded, and I had gone with nearly as many girls as I was years old.

With my wife it was different. She was so young, and her parents didn't approve of much going while she was in school. By the way, I took her out of school to marry her. I put her in a very meager little home and expected her to stay pnt. And I changed from the fastidious, gay, dashing beau to a rather untidy, careless husband, concerned chiefly, now that I had a home of my own, in making money—money for our old age. And making money meant mostly doing without all but the barest necessities.

I awoke one day to the fact that I was not getting much out of life, that my wife, always temperamentally and physically unsuited to the life I had planned, was breaking down under the strain. Some literature I found lying about (left purposely, I believe now, by her) set me to thinking. It tanght that a man set his own limitations; that you could never have anything—comforts or barest necessities—unless you thought so. In fact, it taught that our life was just what our thinking made it. It taught that we could never have anything, do anything, or be anything unless we thought we could, and formed sort of a mental picture, as it were, of the thing thought of.

What Our Neighbors Enjoyed

It set me thinking, and I begau going back over our life. I began to see that I had set our own limitations. Many of our neighhors had twice the comforts and twice the pleasures we had, yet they were just as well off financially aud far happier.

I had received the idea from my parents that young people were supposed to work and pinch and save—always saving for old age. Then I began to go back in retrospection over their lives. They were the living example of what they preached and what I had been practicing for ten years. The picture was far from satisfying. They were very comfortably well off, but a life of denying and pinching and saving had left them narrow, discontented, absolutely incapable of enjoying life or letting anyone else enjoy it.

After doing some strenuous thinking I resolved, for the sake of my wife and boys as well as myself, to get out of the rut of wrong thinking, out of the pinch-and-save rut into a broader path—a path that meant brain capacity sufficient to make enough to live on and have all the comforts and luxuries we could pay for.

As a first step I suggested, the very next day, going to a neighborhood party to which we had been invited but I had never thought of attending. When I mentioned it to the Wife, the way her eyes lighted up told me how hungry she had been for something of the kind. We both entered into the sociability of the evening, and even ended with a dance in the long farm home dining-room. No one could be more surprised than I myself at the pleasure and enjoyment I got out of it. It had been the first for ten years.

When at last we started home it almost seemed that Little Wife and I were boy and girl again.

It was only the beginning of a new and better life. I sold a couple of fat steers and gave the money to her. The few little touches and changes she made about the home far exceeded in daintiness and comfort the outlay in money. We subscribed for good magazines and papers, and I began using my brain to better advantage about the farm. I studied all the latest methods and improvements and used them when my judgment approved.

We made ourselves useful in the neighborhood. We have added comforts and even luxuries as fast as we could, and we are doing better financially, and my wife is regaining her health. We are living a broader, fuller, more complete life than it would have been possible to have lived before. And all because I have got out of the rut of wrong thinking; out of the pinch-and-save rut; out of the rut of setting our limitations short of our ideal; out of the rut of thinking all the good things of life are for old age.

FIFTEEN THOUSAND boys and girls in Missouri are studying elementary agriculture.

IT IS said that it costs from three to five times as much to grow head lettuce as it does to produce the ordiuary kinds. Do you think so? Let's hear from you.

WE SHOULD like to have letters from farmers who have had experience with using farm elevators. Several excellent devices are on the market for saving lifting. Do they pay?

About Your School

By Frank Orr

WE DO not hear so much about neglected rural schoolhouses and grounds as formerly, but there are still localities not ahove suspicion, judging from a criticism made by an official of the home economics department of an institution in one of the Rocky Mountain States.

Here is her report after making a survey of fifty rural schools, all located in one State:

Number of schools	50
Clean yards	21
Plants and flowers in yard	5
Fences in repair	6
Good main building	35
Satisfactory inside finish	5
Number scrubbed regularly	1
Right number of windows	6
Good window shades	10
Satisfactory wall finish	6
Good pictures	3
Satisfactory stoves	3
(Clean, none)	
Books in good condition	3
Water cooler with cover	None
Individual cups	1
Wash basin	3
(Those were dirty)	
Towel	2
(Common property and dirty)	
Desks, removable	None
(39 fair condition)	
Teacher's desk, good	45
(But many were untidy)	
Waste-paper basket, good	2
Outbuildings, fair	17
None	5
Toilet paper of any kind	None
Scrubbed	None
School lunches, some attention given to how and where eaten	3

Her report closes with these apt words of comment: "How would your school score on these points?

"If your school is among those on the neglected list, and you are not an officer, parent, or teacher, do not 'put up your self-righteous umbrella' and say, 'This shower of words is not for me.' It is for you and every citizen in a neglected school district.

"Why not get busy and close school for a day? Have a 'picnic dinner' and 'clean-up day.' Let the men bring rakes and mowers, hammers, nails, brushes, and paint, and the women bring things to eat and mops and brooms. You can have a good time and then go home with the feeling that you are taking an active part in the great movement for the clean rural schools in ——."

E

Why is a Picture Page?

HOW many times have you asked yourself that question? This is a picture age we are living in. As the movies have taken their place in the theatrical world, so have pictures gained for themselves a place in the farm-paper world. The time has passed when any of us are satisfied with a paper with few or no pictures. We have always used a lot of pictures—so many of them that our friends often call us the Pictorial Farm Paper. The reasons we use pictures are many. We wish to provide a variety of entertainment, to give a clearer description of things as nothing but a picture can, and to furnish the proper eye-rest. We are doing this for you.

PHOTOGRAPH BY UNDERWDOD & UNDERWOOD

You can't make a British soldier mad by handing him a package such as this man is folding, counting, and tying. These comfort bundles are sheepskin sleeping bags. They are especially appreciated by soldiers who had their feet and hands frozen last winter in the trenches in Belgium. A recruit will take one, too

This is a picture of a "vanishing race" that hasn't quite vanished. These animals are in the Buffalo Garden of Eden, provided by a far-sighted man of the Great Southwest. Here they, the remnants of a proud and prolific race of the plains, are given every care. And to think that half a century ago intelligent men went out and killed the ancestors of these animals by the score just for the sport of the chase!

PHDTOGRAPH BY UNDERWODD & UNDERWOOD

"Now is the time to get in on the 'ground floor' and buy some of this stock cheap. The shares will pay 10 per cent dividends," the broker's letter said. Here is what the farmer wrote: "I have stock that declares 1,000 per cent dividends twice a year. Such a dividend was declared two weeks ago by one of my shares. I am on the ground floor, too"

No, this young man isn't herding sheep or cattle on the Western range. He has a far different job from that. He is one of the many European soldiers who are trying to prove to their enemies that they should stop fighting. This young man is ready for bed. We have left the flap of the sleeping bag open so you can see there is a man in the bag. There is another reason for the open flap. How could this soldier boy see and dodge exploding shells if he had his face covered?

There is a little lesson in preparedness we humans can get from Tabby. She ran up the post because it was the easiest thing to do at the time. Even though Rover is growling and barking, she will come down when she gets ready. Tabby has practised preparedness every day of her four years by sharpening and strengthening her claws on doors, and by running up and down posts

Sh-Sh-Sh! The secret of the success of the Fremont, Nebraska, tractor show is out. What chance have other shows against competition like this? At the Fremont show this year they had girls—and such good looking girls, too—who drove demonstration machines. No State has a corner on good-looking girls. And the shows next year—Ah!

PHOTOGRAPH BY EDWIN LEVICK

EW

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price

One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising

Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.

Advertising rates and regulations furnished upon request.

January 1, 1916

Paved Roads for Iowa

THE Greater Iowa Association is out for a program calling for the building of 2,000 miles of paved roads, at a cost of $10,000 a mile, or $20,000,000 in all.

Iowa is roughly 200 by 300 miles in size. Therefore the most that could be hoped for would be the equivalent of three east and west roads and five north and south. The average farm would be 25 miles from one of these boulevards. This seems some distance when the tweuty millions are considered.

Paved roads would be worth all they might cost. Good roads economically built in a settled country always pay a profit in land values alone. And those who get the land values should pay for the roads.

Some system should be evolved by which the taxes would be paid by those receiving the benefits. If we raised all revenues from taxes on sites regardless of improvements, such a project would distribute its own cost on those benefited, strictly according to benefits, whether they lived in city or country.

Paved roads should be narrow. The roads proposed in Iowa would restore to cultivation five acres of land per mile, worth from $750 to $1,250. Perhaps that might be charged to the abutting owners. But that system is not in vogue. The city plan of taxing the cost of street improvements to abutting property would be unjust, but it has the germ of justice in it. Iowa should work out her system of levying taxes for this benefit before adopting the project.

A Good Thought, Indeed

IN EVERY legislative district in which the farmers have the deciding vote there went about at the last election one or more candidates who expressed a vehement desire to go to the legislature "to represent the farmers." Many of these gentlemen will be in the legislatures meeting this winter, but the average farmer will give no attention as to how he is represented. "The Michigan Patron," a Grange paper, tells us how the Legislature of Michigan is controlled, and in doing so draws a picture which is true of many other States—perhaps of yours.

"The Patron" says that an association of saloonkeepers name the five senators and fourteen representatives from Detroit, the mines look after another block, and thus a third or more of the membership is bound hand and foot to private interests before the legislature convenes. "About twenty votes are needed to have control. These are obtained from the weak and fool members. Every man is spotted for any weakness. Does he like to be entertained? He can find it in plenty even in dry Lansing." And "The Patron" does not care to stain its columns with details of the nameless methods in which the "weak and fool members" are dominated.

In your state legislature this winter, if it is in session, this diabolical work is planned to thwart the claims of the people on their representatives. It is a pity that weaklings and fools should be nominated for office, or elected if nominated; but after these things have taken place, not only the weak but the strong would be all the better for a good watching. "The Patron" suggests that a Grange representative should be on the ground to watch and report as to the conduct of legislators both in and out of the sessions.

It is a good thought; but a better plan would be for the farmers of every State in some organized manner to keep in session at the state capital a vigilance committee in the form of a State Farmers' Central Committee. A workman is all the better for the consciousness that his master's eye is on him.

What Bad Serum Did

THE last outbreak of foot-and-mouth disease came from the use of hog-cholera serum which was contaminated with foot-and-mouth disease germs. The serious thing about the matter is that the Department officials had suspected this serum and tested it before it was sent out. For all their testing the disease was in the serum, and broke out in the herd on which it was used.

When foot-and-mouth disease began its ravages over a year ago, a certain Chicago serum company had on hand a large quantity of serum. Foot-and-mouth disease appeared among the hogs at their plant, and the place was quarantined. The serum was sealed up and the sale of it stopped.

After the foot-and-mouth disease seemed under control the serum company arranged with the Government to have the serum tested to see whether or not it was free from foot-and-mouth taint. The test was made and the serum pronounced clean. Then it was sold. After it had been used, foot-and-mouth disease began to appear among the hogs on which it had been used.

The sale of the serum was again halted, the new outbreak was stamped out to the great loss of many farmers, and new tests of the serum were made. Sixty-one animals were injected with this hog-cholera serum without any signs appearing of foot-and-mouth disease, but the sixty-second took the disease. Thus it was proved that the serum was the source of the last outbreak.

The whole matter of the reason why the government tests failed to show the results which appeared in the farm herds on which this serum was used should be well looked into. Were the tests properly made? Do the government doctors know how to make such a test? Does anybody know?

The serum manufacturers are interested in the clearing up of this matter quite as much as are the farmers. The very existence of their business depends on its being so conducted that their serums may be used by the farmers with the full confidence that while curing or preventing hog cholera other diseases will not be introduced.

Another Victory Near

THERE have been so many cases of anthrax in human subjects that the sensational press speaks of it as an "epidemic"—which it is not. It is a terribly fatal disease, and we may well be concerned in the fact that there have been many cases lately. One state veterinarian has died of anthrax.

People catch anthrax from contact with diseased cattle or horses, or with wool or leather from diseased animals. Before the medical world knew what it was, many people died from contracting the disease through weariug shoes made of the hides of animals which had died of anthrax. The germs of the disease are the most resistant known. Twenty years of drying will not kill them.

There is hope that Dr. Adolph Eichhorn of the United States Department of Agriculture has perfected a cure for this disease in the form of an anti-toxin.

George F. Stackpole, an aged lawyer, was treated with the Eichhorn serum, and seemed cured; but, owing to his feebleness, died of collapse. It is to be hoped that this cure will be found effective, since more or less anthrax is existent among cattle and horses all the time, and, owing to the difficulty of disinfecting after it, each case is a danger to human life. We have long had a preventive serum, but no cure for the disease once it appears.

Our Letter Box

Farming a Life-Work

DEAR EDITOR: I know it is hard for a young man to decide on a life-work when the world presents so many varied conditions. It does seem as though some people are led to believe to "do the other fellow before he does you."

I have seen so much misery among the rich and well-to-do that I always hesitated to accumulate too much. But I am happy, and I do not believe dollars alone make the man successful.

I believe that farming is the best occupation for a young man to take up, if he likes it. There is an unlimited field, and it's certainly an honest way of making a living. If a man owns a farm that makes him a liviug, he can work it so that each year it becomes better. He can take what surplus he makes in good years, and when he becomes old he will not have to work so hard, but he can keep busy. I believe an honest man does not want to sit around after he gets over his younger days.

The happiest men I ever knew did not hoard up money, but earned what they made by hard work, to be spent as needed. They were liked by their neighbors, because they did not live just for self. They were always cheerful and willing to lend a helping hand.

E. A. L., Oregon.

Sudan Grass Next to Alfalfa

DEAR FARM AND FIRESIDE: I notice readers are askiug questions about Sudan grass. Here is a little of my experience with this wonderful fodder crop:

As a grass crop I believe it stands second only to alfalfa where it does well. In some ways I think it better than alfalfa, as it is not so exacting in its soil requirements, and for that reason will produce a profitable crop where alfalfa will fail.

It will not make extremely heavy yields except in the Southern and Central States and Great Plains regions, where crops of nine tons per acre have been grown in one season under favorable conditions.

Feeding value of Sudan grass ranks about with millet and Bermuda grass, and is considered above timothy. In fact, in protein content and general feeding value, Sudan grass is only just under Mammoth clover.

On the whole I am well pleased with what it has done for me thus far. I believe it is destined to become a great boon to the Western farmer.

GEO. W. DEWERS, Kansas.

Threshing the Family Terror

DEAR EDITOR: This is a country of small farms and small grain crops, and it is something of a terror to our farmers and good wives to be obliged to have twelve or fifteen men and three or four teams at threshing time.

Threshing is done from the shock mostly, and the amouut of wheat and oats threshed is seldom over 150 bushels. For that reason I am greatly interested in small threshers, such as you described in your issue of October 23d.

W. W. W., Tennessee.

Handicapped but Successful

DEAR EDITOR: My mother was left a widow, with a lawsuit, a mortgaged home, two cows, three small children, and a 160-acre desert tract which had to be sold to pay the debts. After a complete inventory of her stock in trade she found she had a piece of land in town, 90x140 feet, on which stand the house, barn, and coal shed, also about 60 red currant and gooseberry bushes.

We decided to sell flowers, fruit, and milk. Mother always had what the neighbors called "luck" in raising flowers. That first year we bad a great many pansies, and my mother made these into good-sized bunches, and I sold them. We had planted sweet peas, marigolds, sweet williams and a few more old-fashioned flowers in the spring, and when the pansies were gone I sold these. When our flowers were sold, with the fruit and milk, the result was very encouraging.

The next year we planted more flowers and a few vegetables. The lettuce sold here at that time was of an inferior quality, so we got a good kind. We soon had the reputation of having the best lettuce aud the earliest green onions in town. That summer we doubled our earnings over those of the first year, and we had a few regular customers.

The next year we sold our cows, as we could get no pasturage for them. We planted more flowers and vegetables thau we did the previous year.

By this time we had a regular trade established, and could not always meet the demand. Our earnings went as high as $75 for the summer, and besides this we had all our potatoes for the winter and all the other vegetables we needed. Whatever we sold was almost clear profit. We bought fresh seed every year, and sent to reliable seed houses for it. The seeds planted were those of varieties suited to this climate, and could stand the drought well.

SUSAN KELLY, Idaho.

Seeing is Believing

DEAR EDITOR: While it may come a little late, I wish to tell you that I highly approve of the stand you took on the sheep-killing dog question some months ago. If you were out here where the dogs are raiding sheep nearly every night, you would, if possible, realize even more fully what a menace the dog is to the sheepman.

D. P., Ohio.

Bits of Good Humor

Advertise! Advertise!

"I lay wide awake last night thinking of my business."

"Bad plan, old chap; better keep wide awake daytimes."—New York Sun.

Justice

A Sunday-school teacher had been telling her class of little boys about crowns of glory and heavenly rewards for good people.

"Now, tell me," she said at the close of the lesson, "who will get the biggest crown?"

There was silence for a minute or two, then a bright little chap piped out:

"Him wot's got t' biggest 'ead."

Injustice

JUDGE—"Have you anything to say before sentence is passed?"

BURGLAR—"The only thing I'm kicking about is bein' identified by a man that kept his head under the bedclothes the whole time. That's wrong."—Philadelphia Eveuing Ledger.

Agriculture To-day

"How many head o' live stock you got on the place?"

"Live stock?" echoed the somewhat puzzled farmer. "What d'ye mean by live stock? I got four steam tractors and seven automobiles."—Judge.

Laughter

Laughter begins either with the mouth or the eyes. Then come the other muscular groups, and then come the vocal expressions of laughter, such as brays, cackles, sniggers, simpers, giggles, snorts, grunts, foghorn rumbles, yells, shrieks, guffaws, trills, chuckles, sniffles, and all sorts of peculiar bird notes and musical sounds.—B. C. & E. Jourual.

Admission, 10 Cents

A circus man tells this one:

"We were doing Pottstown, Pennsylvauia. The price of admission was 25 cents—children under ten years of age 10 cents.

"Among the first to arrive were a lad of about eighteen and his little sister. He laid down 35 cents and asked for two front seats.

"'How old is the little girl?' asked the ticket seller.

"'Well,' said the boy, 'this is her tenth birthday to-day. But she was not born until five o'clock in the afternoon!'"—New York Times.

Marital Views

"Sometimes," confided Mrs. Longwed to her intimate friend, "I think my husband is the patientest, gentlest, best-natured soul that ever lived, and sometimes I think it's mere laziness."

He was Great

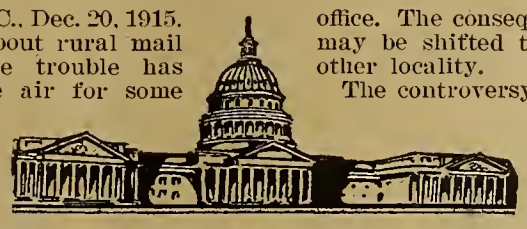
A remarkable tribute was recently made by a negro preacher to a white preacher who had consented to occupy the black brother's pulpit one Sunday. He said: "Dis noted divine is one of de greatest men of de age. He knows de unknowable, he kin do the undoable, an' he kin onscrew de onsrutable!"

E-W

The Rural Route War

How Congress Looks at Mail-Delivery Change

By JOHN COLEMAN



WASHINGTON, D. C., Dec. 20, 1915.

WAR is on about rural mail routes. The trouble has been in the air for some months, but with the meeting of Congress it has flamed up violently. Last summer the Post-Office Department began reorganizing rural mail rontes in many of the States. A general reorganization is planned, and is to be put into effect as fast as the Post-Office Department can bring it about. This reorganization is the cause of the difficulty.

Indications point to a clash between a large part of Congress and the Post-Office Department about the changes in the rnral mail rontes. This clash will be one of the big featnres of the present session.

The Post-Office Department has undertaken to overhaul the rural mail routes because in the opinion of the Postmaster-General the service costs too much money and can be conducted at less expense. The Postmaster-General takes the ground that it can be conducted more efficiently under the system which he is pntting into effect. Under the new system a large nnmber of the old routes have been abolished and new and longer routes have been established. Sometimes two rontes are combined into one, or two routes formed to cover a region where three routes existed before. The carriers in general are required to cover longer routes and to serve a larger number of persons. The Post-Office Department wants to use automobiles where the roads permit. It is the plan of the Department to use automobiles in the months when the roads are good, and to use horses and wagons the rest of the year.

Most stories have two sides, and so has this one. The story told by the Post-Office Department, in effect, is that the reorganized service, if the public will be patient, will be better in the long run than the old service, and will not be so expensive. "Too much 'pork bar'l' in some of the old routes" is asserted by the Department.

But a large share of the people who get their mail by rural free delivery are not disposed to wait with patience on the future. They feel that the new service is not what they are entitled to. Hence protests are raining down on the Post-Office Department, and on members of Congress, from those States in which changes have been put into effect.

It is undoubtedly true that a great many of the patrons of the rural-route service are satisfied with the new routes. But it is plain that many are dissatisfied, and the dissatisfied patrons are complaining vigorously and bitterly.

Senators' and Representatives' desks are piled with letters and resolutions of protest against the rural-route changes. As one member put it:

"About all I'm doing is to receive protests about rural routes, send letters to the Post-Office Department about them, and acknowledge receipt of the protests."

Mass Meetings Held in Middle West

In some parts of the Middle West, mass meetings have been held to object to the new routes, and resolutions have been prepared to express the feelings of those at the meetings. Numbers of such resolutions have been forwarded to Washington.

While a variety of objections are made to the changes in the routes, one of the most common is that the new routes are too long. The carriers cannot give all the patrons good service. Some patrons get their mail only three or four times a week instead of daily, as before. Another objection is that many patrons find themselves removed too far from their mail boxes. It is charged that farmers in a good many cases have to go a mile or mile and a half to their boxes. Some are refusing to receive mail any longer by carrier, and say they prefer to go to the post-office for it, after the old fashion.

Not only is the Post-Office Department being assailed with kicks from farmers and others who live along rural routes, but business men, especially the storekeepers in small cities and towns, are objecting. In the reorganization of the routes it often happens that the new routes rnn from different post-offices than the old ones. The owner of a store in a small center may find that a dozen or more of his good customers no longer get their mail through their old post-office. The consequence is that trade may be shifted to a rival in some other locality.

The controversy promises to draw more attention to the rural-route system than the system has ever received since it was established. The controversy is not a partisan one. Some of the strongest objections to the new system of rontes have been made by Democratic members of Congress. Democrats and Republicans in Congress from districts and States where there is a large rnral population are found objecting to the changes. Under the fire which has been ponred at him, Postmaster-General Burleson has stood his gronnd and has insisted the economy he would effect would justify him in the long run. Moreover, he is assured of the support of a large number of men in Congress from the large cities, without regard to party. It is the contention of members from the agricultural districts and States that about the only legislation the Government has enacted directly for the benefit of the farmers and the people living in the rural districts is the rural free delivery, and that this service should not be scrimped and weakened.

Prospects are that the whole subject will be fought over in Congress for months. What will come of it cannot be predicted with certainty now, but the effort is on to force a re-establishment of the old routes and to enact a law which will make it impossible for the Post-Office Department to change routes in wholesale fashion at will.

No Good Roads Yet, Some Say

The good-roads question looms up more prominently in Congress this winter than it ever has before. The pressure for the enactment of a good-roads law is strong and is likely to be stronger before the session is over. Large numbers of good-roads bills are being introduced.

The Treasury is feeling the pinch of poverty. Secretary of the Treasury McAdoo finds, like some other folks, that it takes a lot of tall calculating to make both ends meet. Under the circumstances, those who want to avoid a good-roads law say the country cannot afford it at this time.

One of the arguments being advanced for good roads is that the nation needs good roads for military purposes. Another argument is that it would give work to great numbers of men who are unemployed. Congressman Stephens of California has introduced a bill for a great improved road or military highway encircling almost the entire country, more than 10,000 miles long. He says it is needed for military purposes, and to give unemployed men work. He would have the men employed in building the road given two honrs of military drill daily.

This is one of the remarkable good-roads bills which have been introduced in Congress.

Congressman Steele of Iowa is convinced that one of the best solutions of the problem of unemployed men, and one of the best ways to make it unnecessary for the charity organizations in every city and town in the country to give so mnch money to keep people from starving every winter, would be for the Government to furnish work at reasonable wages. If the Government could employ a lot of men at fair wages, he thinks there would be less need for folks to contribute to charity every winter.

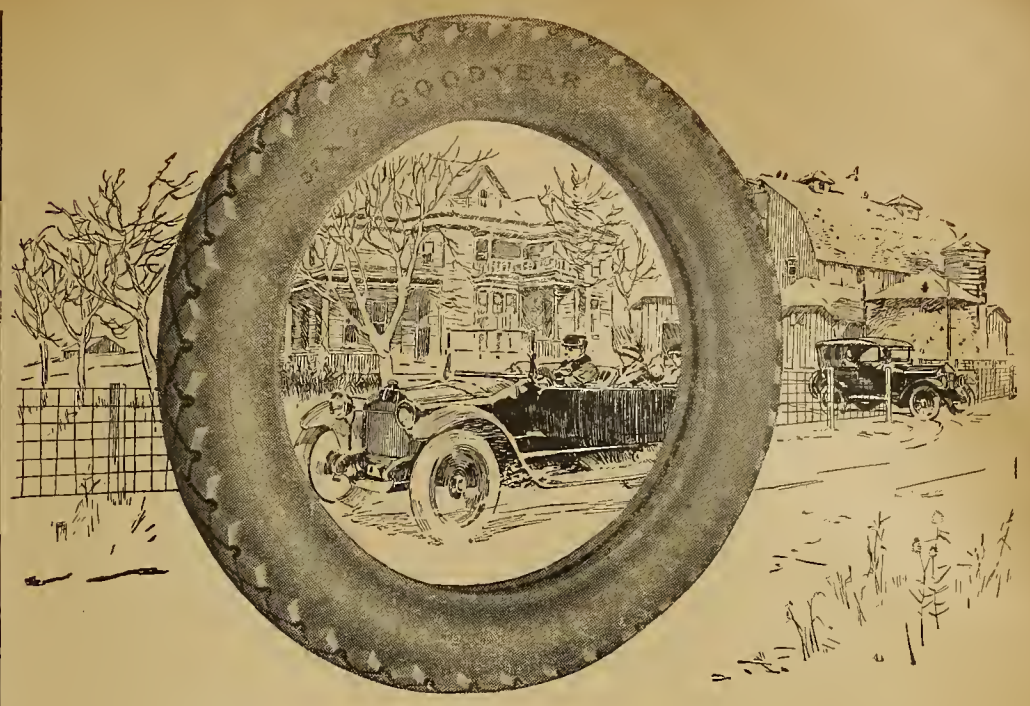
If the Government should build great trunk-line roads, one or more in the South, one or more in the North, employing a large number of men, keeping them at work, it wonld be one of the best things that conld happen.

OVERPRODUCTION is simply another name for failure to distribute products to points where they are needed.

DID you eat your share of our home-grown raisins last year? California vineyardists raised practically two pounds for each of Uncle Sam's family last year—a total crop of 196,000,000 ponnds.

THERE is no such thing as a permanent road. The best of them go to pieces faster or slower. Provision for the maintenance and upkeep of roads is every whit as important as the raising of large sums for making extensive road improvements.

E.W



How We Protect Our Good Name

To you, Goodyear quality—which we believe to be the highest it is possible to put into a tire—means service and utter tire satisfaction.

To us, it means the continuance of your good will, and the good will of the increasing thousands of Goodyear users.

Your thoughts of Goodyear are worth more to us than any monetary profit.

And to retain your good opinion, and protect our good name, we constantly build into our product quality beyond which we believe it impossible to go.

We doubt if any tire can give service as good or as long as All-Weather Tread Goodyears.

The fabric is the strongest made. The tread is tough and durable.

Because they excel in these fundamentals, they excel in tire-life and tire-satisfaction.

Goodyear Tires are not as low in price as many of the close to two hundred brands made in this country.

Yet Goodyear sales to consumers, as well as to motor car manufacturers, are far, far greater than those of any other brand.

The Goodyear Tire & Rubber Company
Akron, Ohio

GOODYEAR
AKRON
TIRES

LACK OF MONEY

Was a Godsend in This Case.

It is not always that a lack of money is a benefit.

A lady in Ark. owes her health to the fact that she could not pay in advance the fee demanded by a specialist to treat her for stomach trouble. In telling of her case she says:

"I had been treated by four different physicians during 10 years of stomach trouble. Lately I called on another who told me he could not cure me; that I had neuralgia of the stomach. Then I went to a specialist who told me I had catarrh of the stomach and said he could cure me in four months but would have to have his money down. I could not raise the necessary sum and in my extremity I was led to quit coffee and try Postum.

"The results have been magical. I now sleep well at night, something I had not done for a long time; the pain in my stomach is gone and I am a different woman.

"Every time I had tried to stop coffee I suffered from severe headaches, so I continued to drink it although I had reason to believe it was injurious to me. But when I had Postum to shift to it was different.

"To my surprise I did not miss coffee when I began to drink Postum.

"Coffee had been steadily and surely killing me and I didn't fully realize what was doing it until I quit and changed to Postum." Name given by Postum Co., Battle Creek, Mich.

Postum comes in two forms:

Postum Cereal—the original form—must be well boiled. 15c and 25c packages.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water, and, with cream and sugar, makes a delicious beverage **instantly.** 30c and 50c tins.

Both kinds are equally delicious and cost about the same per cup.

"There's a Reason" for Postum.

—sold by Grocers.

SAVE-The-HORSE

(Trade Mark, Registered)

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Live Stock—Dairy

Butter—Oleo—Congress

By Carlton F. Fisher

AT ONE of the leading state universities a class of dairy students ate oleomargarine all winter. It was at a boarding house, and not till spriug, at grass time, when the flavor of butter changes, did they detect the substitution. The oleo didn't change,

Usually the less a person knows about oleomargarine the surer he is that uobody could fool him. But in the Dairy Division of the Department of Agriculture the head oleo-butter expert frankly says that he can't tell some grades of oleomargarine from butter without a careful analysis. This is getting to be a pretty serious state of affairs, at least for the dairy business.

Oleomargarine is made from various packing-house products, such as tallows and fats, also from vegetable oils, notably cottonseed oil. Even when it contains some cream and butter to give it the dairy flavor, the total cost of ingredients is only about half the cost of butterfat. Then, too, of late years the packers have succeeded in using yellow fat so skilfully that oleomargariue contains a distinct yellow color without artificial coloring. That makes oleo rather hard competition.

The dairy people, especialy the creamery interests, feel that they were in busiuess first and have a right to some protection. To that end they organized the Natioual Dairy Union some years ago, which has since maintained a delegation at Washington during sessions of Congress. The object of this "lobby" is to look after the interests of the dairy cow—which, by the way, isn't a bit worried—and incidentally to safeguard their own welfare. The dairy interests succeeded a while back in getting a tax of a quarter of a cent a pound placed on uncolored oleo, and teu cents a pound on oleo colored to imitate butter. The Bureau of Internal Revenue looks after the collections.

Both Sides in Brief

The object of the quarter-cent tax was to defray the expenses of inspection, and of the ten-cent tax to discourage the coloring of oleomargarine. The yellow product is no more wholesome, nor has it any more food value, than the uncolored, and the dairy interests felt that the yellow color was a sort of a trademark for butter. It was adopted and established long before oleomargarine was invented.

The Dairy Union also has the task of educating Congress to the importance of the dairy business, and to prevent new members of Congress from getting lined up with the oleo folks without hearing both sides of the story. For the oleo interests are able to get up a strong-looking case. Oleomargarine, they say, is a healthful and legitimate food, and should not be taxed at all. To tax it is to make poor people who cannot afford butter pay a tribute to the dairy business. They admit that some dealers sell oleo as butter, but they claim that butter itself is not quite free from deception, because most of it is artificially colored, which is the case. The National Dairy Union has perfectly sound answers to all these charges, and can present plenty of evidence to show that oleomargarine prices go up and down seasonally with butter prices, and have little to do with the actual cost of oleo.

McCollum of Wisconsin has proved that oils like those used in oleo are not adapted to the nutrition of young animals—children for instance. The fat on which young animals grow best is that secreted by the maternal organs, and butterfat is one of the most important as a general food. This, in scientific circles, is a strong point in favor of butter.

Things have been going along that way for about five years now, and the annual scrimmage on the subject is about to begin. The one great problem is to devise a way of making the public sure of getting butter when it pays butter prices, and also to protect the man who eats at a restaurant from being served oleo unawares. The National Dairy Union cau prove that the present oleo law is constantly evaded, and should be strengthened. On the other hand, the packing and cottonseed-oil interests consider the law a hindraunce to a legitimate business, and want the limitations removed.

The dairy interests have formulated what they waut in a bill which they will have introduced at the next session of Congress. This bill provides for:

The change of the name "oleomargarine" to "margarin," because "margarin" is the word used by all other nations.

A flat tax of a cent a pound on all margarin, whether colored or not.

A limitation to the degree of color margariu may contain. The bill specifies the exact wave length of reflected yellow light based on a study of light values approved by the U. S. Bureau of Standards.

Margarin to be sold in half-pound. pouud, or five-pound packages, sealed with strip of revenue stamps—like tobacco.

Prohibiting the use of names of breeds of dairy cattle or dairy terms on oleo labels or trade-marks. (This would prohibit a trade-mark such as "Fancy Creamery Margarin" or "Choice Jersey Margarin.")

Amoug other restrictions is a clause to prohibit mixing butter with margarin.

License fees for retailers, wholesalers, and manufacturers are provided for, and all manufacturers and wholesalers are required to keep books showing the amount of their busiuess and to whom they have sold margarin. These books are for reference by inspectors of the Internal Revenue Bureau.

Dairy Butter Now More Easily Made

The dairy interests have drawn up a rather strong bill, but I doubt whether it will pass in its present form.

The cleanliness of the two products, butter and margarin, is something the dairy interests have wisely left unstressed.

Butter made in the so-called centralized creameries of the Central West has for the most part a squalid life history. The cream is sometimes so rancid that it must be treated with neutralizers such as soda and lime, both of which methods are contrary to the spirit of dairy laws. This matter has been the subject of investigation by the Government and several States. Minuesota has taken it up of its own accord, but for reasons not yet made public the Government has thus far failed to apply the pure-food law, which is thought to cover the matter.

Butter made in the smaller creameries from cream received in a fresher state is a better article. But this is in a minority on the principal butter markets.

These butter couditions are no secrets; they have been widely discussed at dairy conventions and in dairy publications having liberal editorial policies. The editor of a prominent dairy paper, who formerly was in charge of government butter investigations, says editorially that if creamery men continue to make poor butter "they may expect that oleomargarine will be recommended by domestic-science teachers and others, as no one wants to consume old rancid butter which has neither a good aroma or flavor, and usually is loaded with salt to the extent that very little flavor except salt can be detected."

On the other hand, oleomargarine has rather a bad criminal record as the result of illegal manufacture and illegal sales in attempts to evade the internal-revenue collectors.

Dairy farmers can wisely profit by this state of affairs. A first-class dairy butter has wonderful trade opportunities. It keeps better than average creamery butter and commands about the same prices. The usual fault of dairy butter is the poorness of the package and failure to have all the buttermilk thoroughly washed out. In these days of the small-creamery churn, with a small engine to run it, dairy butter can be made about as cheaply as in the creamery. The advantages creameries have had over dairies is their ability to make butter for from one to two cents a pound, whereas the cost of making butter on farms was close to five cents a pound where hand labor for churning was employed.

Whatever turn oleo legislation takes, it will not likely have a serious effect on the man who makes good dairy butter.

Dobbin is a Loafer

HORSE labor in North Carolina is now estimated to cost an average of $7 per acre for each of the six and one-half million acres in crops in that State. There are 360,000 horses and mules employed ou the North Carolina farms, which are kept at an average cost of $125 per animal. These work animals as now handled average only eighty-three full days of productive work in a year, or less than one day in four.

It is this wasteful use of horsepower that is compelling farmers to turn to mechanical power substitute.

You SAVED ME $30

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ZENAS SPICER, R. 2, Monmouth, Ill., says: "The No. 8 Spreader is satisfactory in every way, works well in all kinds of manure and has given no trouble. I like it better than any spreader I ever saw, think it stronger and not as liable to break; has no cog wheels, can be used in winter as well as summer, light in draft, neat in appearance and well painted. You saved me $30."

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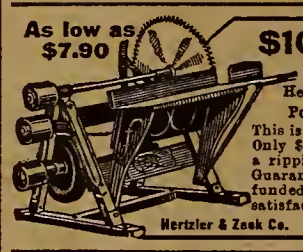

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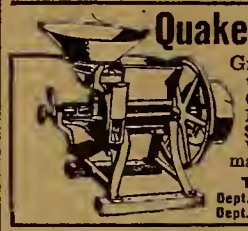

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If it is not as good as I say, then I could not afford to offer it to you for a ninety-day trial. I couldn't afford to guarantee it for ten years against defective workmanship and materials. You save money when you buy it; you make money when you use it. Try it. If you like it, buy it; if you don't, send it back. That's my selling plan in a nutshell. Shipped from Spokane, Omaha, Minnespolis, Chicago, Waterloo and Kansas City.

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E

Live Stock—Dairy

For Him Who Churns

THERE is a great deal more to churning than simply turning the crank and stopping when the butter comes. So says A. B. Nystrom of the Washington Experiment Station, and he gives some interesting rules which should save a lot of labor and besides give better butter. The correct temperature is important, so, first, get a good dairy thermometer.

Fifty-five degrees Fahrenheit is considered a low churning temperature, and sixty-five degrees a high one.

Use a low churning temperature:

1. When the cream is very sour.
2. When it is very rich.
3. When the fat globules in the cream are soft, due to soft feeds and grass.
4. During hot weather when the temperature is likely to rise while churning.

Use a high churning temperature:

1. When the cream is rather sweet.
2. When the cream is thin.
3. When the fat globules are hard, due to dry feeds.
4. During cold weather.

When butter comes in from thirty to forty minutes, that is a sign of correct temperature. Butter should always form in granules. If it comes in soft lumps, the churning temperature has been too high. This makes the butter greasy, hard to wash, and it spoils quickly because of the buttermilk that wasn't washed out.

Too low a temperature will cause slow churning and a brittle texture, but these faults are less serious than the others. Turn the churn just fast enough to get the greatest amount of concussion. To do this, consider the amount of cream in the churn and its condition. Sweet cream, especially if it is rich, tends to foam and stick to the churn. In that case turn slowly, so as to give the cream plenty of time to fall.

Next to the churn itself, a good cream separator is the most important utensil in a farm dairy, because it gives you a smooth, fresh, uniform cream.

Sulphur as Hogs Like It

HOGS like a little sulphur, and it is good for them; in fact, they are unthrifty without it. The best ways of giving it to them, also the worst ways, have just been determined by the Iowa Experiment Station.

Mixing copperas (sulphate of iron) in the feed seemed to be a bad practice. It induced scouring. When pigs had free access to sulphur in different forms they liked flowers of sulphur best of all. Glauber's salts (sulphate of soda) was their second choice.

One 80-pound hog will eat, of his own accord, about a quarter pound of sulphur a month, and there is no danger of his eating more of it than is good for him. Let them eat what they want, but don't, except under direction of a veterinarian, put it in their food or drink. Even then don't do it unless you know him to be an exceptionally good veterinarian.

Hogs will stand inbreeding less than any other farm animal.

Substantial Dairy House

THIS dairy house is located on a practical farm in Tennessee. Made of concrete blocks and with a concrete floor, it is clean and cool, and will last

for years. But the roof, which is of wood shingles, is already beginning to show the effects of weathering.

E

Probably a more durable roof would have been one of asbestos, metal, slate, or tile.

Then the building would be not only fire-proof but practically repair-proof.

Milk Has Vitamines

A LITTLE butter milk or skim milk given to weaned shotes works wonders in their growth, according to John M. Evvard, hog expert of the Iowa Station.

Five weanling pigs in a dry lot were fed all they would eat of shelled corn, wheat middlings, and tankage. Five others of equal size were fed the same ration, except that they received about a quart of buttermilk apiece daily.

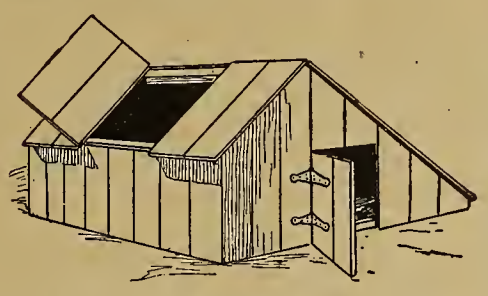
In a hundred days the pigs that received the buttermilk averaged five pounds apiece heavier than the others. Charging buttermilk at 25 cents a hundred, the profit on the pigs receiving the buttermilk was $1.68 per head, and on the others $1.25. This is a good showing, but it would be wrong to conclude that twice as much buttermilk would have given twice as great a profit. Buttermilk is a good feed in itself, but it is most important because it makes grains and other feeds given with it more digestible.

Like medicines, certain nutrients have an important effect on the system. The effective substances are these nutrients, called vitamines, and milk contains them.

That's one reason why milk is such a good food.

Solid Hog Comfort Here

THIS hog house may be made of any convenient size. But here is the bill of material needed for one 6x6 feet on the ground plan:



8 2x4″x6′ plates, ridge, and floor joists.
2 2x4″x8′ end plates.
4 1x12″x12′ floor and side.
2 1x12″x18′ ends.
6 1x12″x8′ roof.
Nails.
2 pr. 6-inch strap hinges.

You will notice that a floor is provided for. This makes the hog house dry and warm for winter use. On bright days open the roof door to let in the sunshine.

The roof door is also convenient for the purpose of watching the sow during farrowing time.

Tankage Improves Ration

MOST of us feed our brood sows on corn. If we will buy tankage enough to afford them one pound of that to fifteen pounds of corn, it will make the corn worth almost twice as much to the hogs and be worth more than the tankage cost in assurance of better pigs, more milk for them, and a healthy sow which will not eat her young.

War Horses and Others

AMERICAN horsemen high in authority say that about one-half million of our horses have been sold on war orders for about one hundred million dollars since the outbreak of the war.

Fully 90 per cent of the artillery horses purchased were sired by draft stallions and were out of small mares. The same horse authorities claim that the Belgian breed in Europe has been practically destroyed, and Percheron breeding stock has also been heavily sacrificed for war use.

A representative of one of America's greatest horse importers says it would not be possible to find 200 draft stallions suitable for export to America, even were exportation allowed.

The crux of the matter clearly indicates that American horse users must depend on the produce of American studs for draft sires for many years to come.

Jumbo Hogs

THREE of America's biggest hogs are Jumbo Prince, shown at the Iowa State Fair, weight 1,005 pounds, Long Chief at Indiana State Fair, 1,010 pounds, and Big Tim, Nebraska State Fair, 1,125 pounds.

These hogs were of the big-type Poland-China breed, and were active and not overfat.

The figures given here are actual scale weights.

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We took three jars; into each we put an equal amount of dry Corn Meal, dry Cotton Seed Meal and DRIED BEET PULP. Then we poured into each jar an equal amount of water. After standing for a few hours the three jars showed that the Corn Meal and Cotton Seed Meal had absorbed less than twice their own bulk of moisture while the DRIED BEET PULP **swelled to more than five times its original bulk,** a similar action takes place in the cow's stomach.

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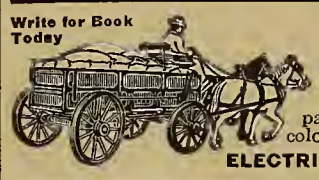

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New Recleaned Iowa Grown Timothy, free from noxious weeds. Guaranteed Satisfactory or money refunded. Write today, 100-page catalog and Free Samples. Low prices on Clover and all grass seeds. Write before advance.

A. A. BERRY SEED CO., BOX 342, CLARINDA, IOWA

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KANT-KLOG SPRAYER

9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. *Send for catalog.* Agents wanted.

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80c CYPRESS, well made with cross bar, blind tenons, white leaded in joints. GLASS, $1.50 per Box.

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$1.50 per 1000, etc. Best Michigan Stock. 100 varieties including Everbearers, also Grapes, Raspberries and other small fruits. Send today for FREE Catalog.

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SPRAYERS FOR EVERY NEED

Bucket—Knapsack—Barrel—Traction and Gas Engine Machines. We make them all. Directions FREE.

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Wholesale Prices. Direct from grower. Guaranteed quality. Apple & peach trees. Asparagus, gooseberries, berry plants, privet hedging. New catalog ready.

The Westminster Nursery, Box 10, Westminster, Md.

SAVE MONEY ON FARM FENCE & GATES

Get our new catalog—full of fence and gate bargains. It will save you big money. It tells all about the best farm and lawn fence made—that's

MASON FENCE—GUARANTEED

Yes, every rod guaranteed and sold on 60 days' test. Must satisfy or your money back. See our great 48 in. farm fence for 26c. a rod. Farm gates at $2.95 each. Scores of other great fence and gate bargains. Write today for our catalog; it's Free.

60-DAY TEST

The Mason Fence Co., Box 86, Leesburg, O.

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Get It From the Factory Direct

HORSE-HIGH, BULL-STRONG, PIG-TIGHT

Made of Open Hearth wire, heavily galvanized—a strong, durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices. Here's a few of our big values:

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Special Prices on Galv. Barbed Wire.

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. Write for it to-day. It's free.

KITSELMAN BROS. Box 271 Muncie, Ind.

Garden—Orchard

Grows Frost-Proof Plants

ENORMOUS numbers of cabbage and onion plants of different varieties are now grown along the seacoast of North and South Carolina, where the cold winds make them hardy, and are sent north for early spring planting. They are called frost-proof, and are undoubtedly able to resist somewhat our late spring frosts. One grower thinks he gains two weeks with cabbage by this method.

Next Year's Grapevines

By M. R. Conover

WHEN a man trims his vines of bearing age, he cuts to build the vine for next year's crop and for years of future usefulness. Hence he must keep only buds that will tell for future usefulness, and only such arms or runners as will replace or develop the structure of his vines. For the latter purpose only vigorous canes should be retained.

For next year's fruit crop he wants only the most vigorous buds—those which next year will grow branches 50 or 60 inches long, with large shading leaves and fine clusters of fruit. Such buds are upon the rank canes which are to be cut back to spurs during the dormant season. These canes should be cut back to two buds each. On vigorous canes there is always a good space between the buds which gives ample room for the growth of laterals next year.

There are frequently branches that are more meager in growth; they are short, the leaves were small during the growing season, and the buds are close, perhaps two or three inches apart. It is a mistake to leave two buds on spurs of such canes. They should be cut back to one bud each.

The work of pruning may be done any time in the late fall or winter when the weather is not severely cold, and the cut should be made about midway between the last bud to be retained and the bud on the portion to be discarded.

Correct pruning results in choice products

Making Gardens Pay

By Carl Boseck

LESS than ten years ago what now is known as Foley, Alabama, was nothing more than the end of the Fort Morgan branch of the Louisville and Nashville Railroad. Two or three tawdry buildings comprised the settlement. Tributary to it was a poor farming community.

To-day Foley is an incorporated city with graded streets lit by electricity. It boasts of a home-owned bank with more than $75,000 resources; a good newspaper and a fertilizer plant; is built up of substantial business blocks and beautiful homes, and does a shipping business that in proportion to its population is larger than that of any other railroad point in Alabama.

Co-operation is the foundation upon which this accomplishment has been reared. Foremost among the factors making for this success has been the Baldwin County Producers' Corporation, which was incorporated January 4, 1910. It was the first organization of its kind in Alabama, and was made possible only after the passage of a special law by the Alabama Legislature. Frank Fisher, the first president of the Producers' Corporation, was its moving spirit. Himself no farmer, he nevertheless saw the needs of the community and set himself to work to solve the problem. Up to that time the customary remittance Foley growers received for their produce was small. Often they were called upon to remit cash additional to cover alleged charges. Indeed, there are to-day many places with judgments plastered against the title by commission houses to cover charges on consignments of the earlier pioneer trucking days.

Growers need no longer consign their products. Buyers are always on the platform ready to pay cash for garden truck.

Big Sales Made

In 1911, association members received approximately $31,100; the following year their receipts had climbed to $42,000; and in 1914 a total of $74,487 was paid over to them for their cucumbers, sweet and Irish potatoes, beans, and other produce. The final reports point to growers receiving at least as much for the 1915 crop.

In addition to finding buyers for their produce, the association has saved thousands of dollars by buying seed and fertilizer in competitive markets, its members always purchasing in car lots and paying cash on delivery.

The association is a non-dividend-paying organization and has a membership to-day of more than two hundred persons. No attempt has been made to organize locals at other shipping stations in the county, as the moral effect of this one has been such as to force cash-on-track payment throughout the county, and quotations are always as good, if not better, than those made at Foley.

No buyer would have the temerity to ask for consignments from Baldwin County. An attempt was made by one house at Robertsdale early this spring, but its agents met with so much ridicule that it also paid spot cash when the season opened, and went other buyers one better by eliminating the No. 2 grade from its calculations.

Pack Products Carefully

Baldwin County growers grade what they grow, and insist that the pack at all times must be just a little ahead of what the most particular market may demand. It is this insistence on high-grade pack in uniform, clean packages that has aided no little in their success. The buyer knows what he is getting. The producers' association has taught the railroad how to handle farm products, how to push them through to destination, and have even successfully locked horns with the corporation itself when it arbitrarily tried to raise interstate rates.

The association does not, however, limit itself to trucking operations. Its work is constructive as well, and for that reason it has from the first encouraged its members and other farmers in dairying, live-stock raising, fruit and nut growing, and other operations. In other words, it seeks to put farming on a solid and not on a wildcat foundation. As a result a better grade of cattle is found in south Baldwin County than in any other part of the State, and a number of creameries have been started and are being successfully operated.

Nearly every farm has its well-equipped cannery outfit to supply the family table.

This is what can be done by co-operation: Alabama never shipped a car lot of pears until one went north from Foley. The South never shipped a car lot of Jersey sweet potatoes to a Northern market until Foley had shown how to do the trick, and at present about three cars a day are being shipped north. Baldwin County never knew what it was to ship out a carlot of corn until such a car went out from Foley, and this car had been grown on one man's farm. Alabama's first carload of Satsuma oranges went from Foley.

Better Potatoes Easy

By W. H. Snode

I HAVE been working to improve my potatoes by the selection of seed for ten years, and have practically overcome blight troubles by developing a disease-resisting strain.

For the past five years I have not sprayed my potato crop at all, and during this period the per cent of blighted potato plants was very small, and none that show the slightest trace of disease are saved for seed.

An extensive grower of potatoes, after observing my growing crop, remarked their vigorous, healthy condition and asked, "How many times do you spray?" My reply to him was, "I do not spray at all, but overcome the blight by selecting seed that resists this potato disease."

I feel sure that labor and money used in spraying potatoes are thrown away if disease-resisting seed is regularly saved and planted. I began my selective work with my present strain—Rural New Yorker No. 2—in 1913. One hill that year showed quite a remarkable growth and vigor, and was conspicuous across the entire field. I marked this hill to find whether the difference in growth was due to environment or to hereditary influence. I saved the six potatoes produced in that hill, and planted them separate in 1914. The plants therefrom showed the same exceptional vigor and growth and entire freedom from blight as the parent hill had done. In 1915 I planted all of this resistant stock separate, and carefully estimated the yield as fully 350 bushels per acre. The remainder of the field yielded 285 bushels per acre, the culture, fertilizer, and soil conditions being the same in both cases.

My method of handling the crop follows: Early in April, 1915, I disked a field that grew sweet corn in 1914 about four inches deep, and made an application that year of ten loads of stable manure per acre. I then plowed ten inches deep, rolled and disked the land again. After giving very thorough preparation of the soil for planting, I applied 400 pounds per acre of 2-4-8 fertilizer in the hill. No spraying was done in either case.

I have no seed to sell. I simply wish to make known to fellow farmers the result of plant-selecting for seed.

"PUT only one variety, grade, and size of apple in a package." That is the advice of a Minnesota fruit expert. The same rule is good for nearly every farm product.

Heading Young Apples

By M. R. Conover

Beginning of a high head

IN TRAINING the young apple trees after the open-headed form, many growers are starting the heads at about two feet from the ground. Of course it is easier to get the fruit and to treat for diseases, but it also favors a more just distribution of sunlight in the mature orchard and a more even and vigorous development of the framework of the tree, because the low-placed limbs are grown from the strongest buds of the tree's early life—those low on the stem formed the first year.

The tendency of these low-placed limbs is more generally upward, with less of a sag than those resulting from buds high on the trunk. Therefore, low-headed trees should not present much greater difficulties in cultivation than trees headed high whose branches sag.

Heading must begin with the infancy of the tree. The nurseryman usually determines the choice of these structural parts, but the grower has the nurturing of them. Careful attention to selecting the buds to replace injured branches makes possible a well-balanced tree.

It is not wise to attempt to correct a young tree started for a higher head into a low-headed type, for buds of sufficient vigor to compete with the other parts will not occur upon the trunk after the growth of permanent branches higher up has been established.

Buds that will grow into healthy limbs that will make stout, vigorous supports for the tree's future crops are judged by location and appearance. The first year of the tree's life such buds occur low on the trunk. After branch growth is established, the stronger buds are on the first laterals until the tree is three or four years old.

If an established arm or main limb is broken by accident, it is better to cut so that a bud upon the stub of the broken limb may eventually replace it.

Shoots growing below the established arms are robbers, or "suckers." They should be rubbed off while in the bud stage. Avoid the selection of any buds above or below a trunk wound.

Laterals upon the main arms should be chosen so that future limbs will not quarrel for place.

Low-headed framework well started

Strawberries in a Pool

ORGANIZED selling in Gibson County, western Tennessee, has made this section of the country a strawberry center.

The organization was incorporated seven years ago. During the seven years it has experienced the usual ebb following the first flood of favor when an organization is young. After going perilously near to foundering on the rocks of discord, their ship, Co-operation, has settled on a level keel.

The story of how these strawberry growers were induced to unite their endeavors and have lived, learned, and improved their business interests carries a practical lesson for other lines of farming than strawberry-growing.

Mr. E. M. Jones, one of the strawberry growers and a member of the Dyer Fruit Growers' Association, gives this experience:

"The Dyer Fruit Growers' Association is not perfect by any means, nor so near ideal that we can say, 'Go and do likewise.' But we are getting some results.

"The pooling of berries was practiced by our fathers several years ago. This mode of selling was taught them by the enlightening school of experience.

Why Prices Went Down

"For a good many years previous to our organization, the berries were consigned to commission merchants and afterwards sold here individually in competition with each other. As a result of this practice, prices worked down so low there was no profit for the grower.

"Then for several years the berries were turned over to local brokers and were sold by the carload, thereby getting the market price. We were not then at the mercy of the dishonest commission men.

"But pooling without grading in the long run was but very little improvement over shipping to commission merchants. Some growers put up a good grade of fruit, but the majority packed so many poor berries that the buyers would discriminate against the berries shipped from our locality.

"Our association was organized in 1908 with a good membership and a strong interest in the undertaking. But after two years the growers seemed to lose interest, and the association all but fell through. They were expecting too much on the start.

"But one season without the association enabled the growers to see the benefits of organized selling. We therefore reorganized, and have been strong ever since.

"All the growers are not in the association. Some still turn their berries over to the local brokers, but by proper grading and inspecting we have not only raised the standard of the association berries but all the berries shipped from this locality as well. We have created a reputation for good fruit, and the market takes our fruit readily.

"We have rules of grading. Each man's berries are inspected, and if they do not come up to the standard they are put in the second class, which sells cheaper.

Improved Shipping Facilities

"Each member has a number, and he must put his number on every case. This is a check against a poor pack of fruit getting by the inspector, for should this happen, the number will place the responsibility on the individual whose fruit was below the standard grade.

"Through the efforts of the organization the railroad has been induced to build a good fruit shed, which is a great improvement over the old way of loading from the wagon directly into the car.

"When the local brokers handled our berries, they charged ten cents a case brokerage, but now we pay all expenses with five cents a case.

"What we now need is a refrigerated express service. Through the efforts of all the associations on this road we hope to get better shipping facilities soon.

"Without our organized efforts we could hope for nothing in this direction.

"We are now hoping to get all the organizations in this territory to unite in one central exchange so the associations will not be in competition with one another. If we can bring this about, we expect still better things in the distribution of our berry crop."

New Books

PRODUCTIVE VEGETABLE GROWING, by John W. Lloyd, a thoroughgoing expert gardener, contains about the last word on the economic culture of vegetables. Well printed, finely illustrated, and attractively bound. J. B. Lippincott Company, Philadelphia. Price, $1.50.

PRODUCTIVE FEEDING OF FARM ANIMALS, by F. W. Woll, is a very complete and well-arranged discussion of this most important subject. The aim of the author was to afford accurate knowledge of the principles of feeding, and definite recommendations as well. 330 pages, well and attractively bound. J. B. Lippincott Company, Philadelphia. Price, $1.50.

A CIVIC BIOLOGY, by George W. Hunter, is true to its name only when we think of the word civic as it applies to citizenship. The book fits country life. It is a texthook for high schools, hut might well he used in any rural or city school. Biology means life, and this book is full of life and interest as well as instruction. It may be read with pleasure by anyone, and is an ideal book for the farm library. It is well illustrated and carries many practical suggestions. American Book Company, Cincinnati. Price, $1.25.

Lost People

ORA F. GARRISON of Burlington, Indiana, left his home one year ago last July. He has dark hrown eyes, dark hair, and a high forehead. His weight is ahout 150 pounds, and height five feet seven inches. On each wrist he has a scar, and in the left eye there is a light speck. Information concerning him will he deeply appreciated by his hroken-hearted mother.

HURBERT SHAVER, now about thirty-seven years old, has been missing for thirty years. He was last heard of in Nebraska. When lost he had light hair and gray eyes. Any information concerning a person by that name would he appreciated by his sister, who now lives in North Dakota.

WILLIAM QUALLS left his only sister in 1889, and was heard of in 1912 near Boyington, Arkansas. He is ahout forty-five years of age. His sister and niece, who live in Illinois, are anxious to hear from him or from anyone knowing of his whereabouts.

BRIDGET ROTEGAN MCMAHON, who lived in Baton Rouge, Louisiana, about 1862, is a lost person. She had several children, among them Theresa McMahon and Julia McMahon. Any information of her or the children will be deeply appreciated by friends living in Baton Rouge.

GEORGE PRINCE and Sylvester Prince are lost brothers to a sister in Tennessee. Both have dark hair and brown eyes. They have heen away from home for about twenty-three years, and where last heard from in Alabama. George Prince is twenty-six and Sylvester is twenty-nine years old. Sylvester has a scar in the middle of his forehead

Where $1 Brings Back $3

[CONTINUED FROM PAGE 3]

3,500 pounds of nitrate of soda, containing 16 per cent nitrogen; 4,500 pounds of kainit, containing 12 per cent potash; and 15,000 pounds of acid phosphate, containing 14 per cent phosphoric acid.

Commercial fertilizers and drainage have brought the rentals of the 1,300 Cavanagh acres from less than $2 an acre to more than $10. Grains are raised on all of the farms. The live stock, except on two of the farms, consists of the work horses, a few milch cows, and fewer hogs.

Hence, the only way the fertility can be held up is by the use of commercial fertilizer.

"If my farms were stock farms instead of grain farms," Mr. Cavanagh said, "there would be enough manure produced to keep the farms in a high state of fertility, and I wouldn't have to buy commercial fertilizers. This is the weak place in my farming operations. But a stock farm needs more personal supervision than I can give my farms. I might be in New York City on business when we should ship the hogs or the cattle, and thus would lose more money in one year than I could make in two or three good market years."

Now that all of the farms are in a good productive state, Mr. Cavanagh uses the complete fertilizer 2-8-2, applying 125 pounds to the acre. This maintains the fertility. Pencil maps of the fields are made every fall, showing the lightest yields. These light spots receive an application of fertilizer the next spring just before the crop is planted. Hence, the fertilized acres are not the same ones every year.

The plan of building up the weakest spots in the fields is working out very satisfactorily.

"On Iowa upland that has been cropped with little or no rotation," concluded Mr. Cavanagh, "you can bring up the yield the first year with commercial fertilizer. I could bring up the yield with manure, but it would take two or three years, and besides, I haven't the manure."

All of the Cavanagh land is rented. Mr. Cavanagh pays for the commercial fertilizer used. It is delivered in carload lots at Rippey. The tenants haul the fertilizer to the farms, and bear the expense of applying it. Mr. Cavanagh receives one half of the corn crop, two fifths of the small grain, and $5 an acre for the pasture land. By using fertilizer his farming investment is a profitable one.

That commercial fertilizers can be used with great profit to both owners of farms and their tenants has been demonstrated by the six years' work of John A. Cavanagh.

These Strong, Heavy Roots Mean Earliest Bearing Orchards

Strong, heavy, spreading roots, grown the William P. Stark way produce healthy, fast-growing trees that take root quickly and come into bearing very young. Get our low, direct-from-nursery prices on genuine Delicious, Stayman Winesap, Jonathan, Grimes Golden, McIntosh, Baldwin, Wealthy, Duchess and all other high-quality commercial varieties.

J. H. Hale Peach—$1 More Per Bushel Than Elberta

A peach ⅓ to ½ larger than Elberta, better flavor, quality, color, firmer and far better keeper and shipper. Sells for 50% **more** in big peach markets.

CAUTION—Beware of fakers. **Genuine** J. H. Hale trees are grown **only** by William P. Stark Nurseries under exclusive contract. Look for trade-marked wooden tag with Mr. Hale's personal signature.

Two-Year Apple Trees

Especially grown with branches on upper 14 to 16 inches of trunk. Can be pruned to open vase-shaped heads, without weak crotches. Won't split under heavy loads.

No Agents!
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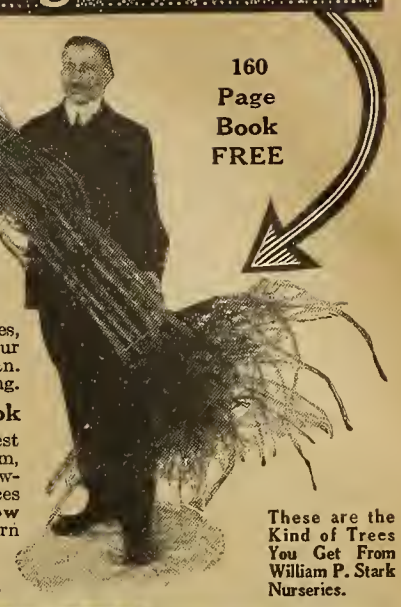

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FRUIT TREES SMALL FRUITS — **IN LARGE OR SMALL LOTS AT GROWER'S PRICES,** direct from nursery to planter. Safe delivery, personal attention and satisfaction guaranteed. APPLE TREES TOP BUDDED TO FIVE VARIETIES—just what's needed for the home garden. Buy at rock-bottom prices of the grower and save disappointment at fruiting time. Get our illustrated catalog, mailed free upon request. — **SHRUBS ROSES**

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Pay enough to get the best, but no more. Thousands of Apple, Pear, Cherry, Plum, Peach and Quince Trees to be disposed of now at wholesale prices.

10 Peach trees, 4 to 5 ft., for	$1.15	6 Cherry trees, 5 to 6 ft., for	$1.42
6 Pear " 5 to 6 ft., for	1.35	6 Apple " 5 to 6 ft., for	1.10

Many other special bargains. Also small fruits, Ornamentals, Shrubs, Roses, etc. All fresh dug. Hardy Western New York grown. Guaranteed true to name and free from scale. Write today for free catalog and save money. Estab. 1879. **L. W. HALL CO., 509 Cutler Bldg., ROCHESTER, N. Y.**

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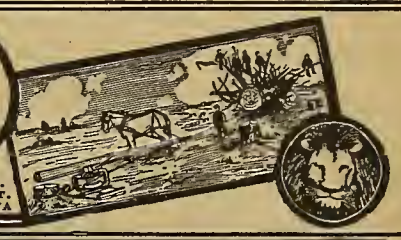

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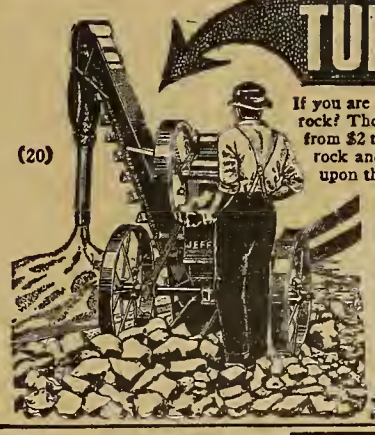

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Harris is the Only Seedsman in the country who tells what per cent of the seeds he sells will grow. Every lot of seeds is tested and the per cent that germinate is marked on the label. The seeds are sent direct from the farm to you at **wholesale prices.** Among them are garden seeds of the highest quality. A new big dent corn for the North. The largest oats ever grown in New York State, and lots of other good things.

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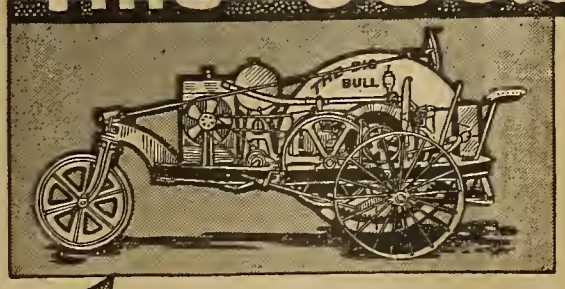

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and Almanac for 1916 has over 200 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about Incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c.

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Both Machines Made of California Redwood

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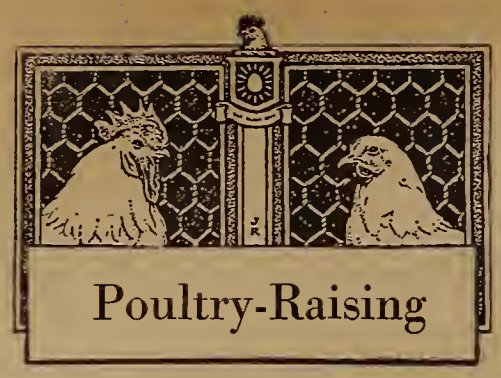


Poultry-Raising

Kill Worms in Fowls

By C. T. Patterson

WORMS affect chickens by using the food nntrients intended for the fowl, and injure the internal organs so they cannot perform their proper functions. If chickens are affected with worms they are not nourished properly, no matter how well fed. The fowls affected with worms will become lighter in weight, and will have ravenous appetites all the time. At feeding time the fowls will feed greedily, but will quit eating in a short time.

Here is a mixture that may be given to the flock in the feed both as a preventive and as a cnre for worms:

Magnesium sulphate	10 parts
Magnesium oxide	2 parts
Sulphate of iron	2 parts
Flowers of sulphnr	3 parts
Ground ginger	2 parts

One rounded tablespoonful of the mixture is added to every gallon of the mash fed to the chickens. The mash is composed of equal parts of corn meal, wheat bran, and shorts. The mash shonld be fed in the morning. Feed all the mash the fowls can eat dnring twenty minntes. The treatment for worms should be given every day for three mornings. Then discontinue nntil needed again.

When seriously affected with worms the fowls stand in a drawn-up position, and they move in a very nnsteady manner, without the elastic step of a healthy bird.

Many fowls in pens are fed an unbalanced ration. The lack of a proper food supply will prodnce a weakened condition. This is favorable to the development of worms.

Magnesium snlphate—Epsom salts—acts on the intestines, magnesium oxide on the kidneys, and sulphate of iron on the blood.

Sulphur is a sterilizer. Ginger is a stimulant for all of the organs.

Three of the ingredients of the mixture contain some form of sulphur. As snlphur is one of the best insecticides and known fungicides, it is evident that it does its part in the destruction of the worms.

This compound acts on all parts of the fowl. It is therefore good for all ailments, including colds and roup.

It is not a good plan to give medicine to fowls unless they need it.

Pocket Money from Geese

By Mrs. Henry Egly

MY EXPERIENCE with raising geese is not extensive, as I keep only two breeding geese and a gander. But there is a good profit for the time, labor, and money invested.

I prefer geese to any other kind of fowl: they are so easy to rear, and mine have never had any diseases. I have never lost one gosling after it was out of the shell.

Geese make good hatchers, but poor mothers. I dampen the eggs every other day dnring the last week before hatching.

For twenty-four hours after hatching I do not feed the goslings anything. I then give them some stale bread dampened with sweet milk.

When three or four days old I let them out on the grass. They are never too yonng to eat grass.

When a week old I feed corn meal dampened with sweet milk, if I have it, or water.

I salt the feed slightly and mix in a tablespoonful of fine, sharp sand for each eight to twelve goslings. Until the goslings are four or five weeks old I feed three or four times daily.

I give the geese all the fresh water they can drink, and that is a lot.

For the first two days I keep them in boxes where they will be comfortable, and also house them in boxes at night when they are small. I use wide boards to make pens which can be easily moved so the young goslings can have fresh grass. The fresh grass is very important.

After the goslings are a month old, fresh grass will furnish most of their living until it is time to fatten them at Thanksgiving. When fattening I just throw them some broken ears of corn and let them run to grass as usual. They need the grass and will fill up to their bills on it.

I always sell my yonng geese alive at Thanksgiving, and do not pick them for two months before selling.

My customers come and get them and pay $1.50 apiece. I have never had to look for a market, as there has always been a good demand for all the geese I have raised.

My young geese weigh alive abont 12 to 14 pounds when sold. I never sell the feathers, but give them to my children.

Speak Your Thoughts

DID you ever tend a score or two of trap nests week in and week ont for 365 days, carefnlly enter and compile the records, and hatch chicks from your best-pedigreed stock for several generations?

What next?

About the middle of March Neighbor Smith's Johnny-boy comes lugging in two or three settings of eggs from their scrub hens, remarking, "Maw allows she would like to exchange some hatching eggs with you."

Neighbor Jones, a mile farther down the road, stops you with the remark, "I'd be willin' to give you a half-dollar more'n the market price for a couple of settin's of eggs from the chickens you have been fussin' with."

Then is the opportnne moment to break the news to yonr neighbors that your eggs are all contracted for by poultrymen who appreciate the labor and cost of pedigreeing stock.

Mistreating Pullets

RECENT study of pullets at the egg-laying contests and experiment stations, also observations made by thoughtful poultrymen, show that pullets just coming into their first laying are very delicate pieces of farm furniture, and should be handled as gently and carefully as valuable chinaware.

It has been found that chasing, scaring, and rough-handling pullets that are almost ready or just beginning to lay may prevent them from laying for weeks and sometimes for months. The egg yolks that were developed and were developing may be reabsorbed and the egg machinery effectively blocked by the nervous shock resulting from fright.

A case of this retarded laying came under the writer's observation last year. A pen of pullets that were sent to an egg-laying competition had jnst laid their first eggs and were in the pink of condition when shipped to the contest.

As a result of rongh handling en ronte or otherwise, these pullets stopped laying entirely for over a month. Sometimes incipient molt results from such change of location. But this was not the case with the pullets referred to. Thns it will be seen that a had fright may cause the loss of a lot of three or four cent eggs.

These geese sold alive for $1.50 each. The owner of the fields in which they were raised, who writes this article, says: "Feed the geese grass, and plenty of it"

Your Questions

The Feather Eater

Query: We have about thirty-five chickens. Some three months ago one rooster became almost bare of feathers on the back close to the tail. The skin has a very red appearance, though it is not broken. Now half a dozen others have the same complaint. Some one told me it came from chickens picking each other, but I do not think so. If possible, tell me a remedy.

MRS. M. L. D., Pennsylvania.

Answer: The tronble seems to be feather-eating. This bad habit is often contracted by chickens too closely confined and not forced to take snfficient exercise. It is aggravated by a diet which does not contain enough animal food. When fowls are forced to scratch for their grain in a deep litter of straw, leaves, shavings, or sawdnst, they are kept bnsy and work off their surplus energy, and will not be so likely to form the habit of picking one another's feathers.

They should also have about all they will eat of grond or crushed meat and bone two or three times a week. This management should reform these chickens, although when they get the habit they are rather apt to continue it. The reason onr inquirer has not observed them doing this mischief is probably because they desist when their attention is attracted by the presence of the person who feeds and cares for them.

Roofs as Lightning Rods

Query: I read your paper with much interest. Lightning-rod agents are in their glory around here. Why cannot a metal roof with proper ground connections be made just as good as a lightning rod? Would not even felt or rubber be as efficient?

D. C. ALLEN, New York.

Answer: Metal roofing can be made into a good protection. It onght to have a snfficient nnmber of points projecting upwards to prevent damage to the roof where the lightning strikes. In any case, of conrse, it is necessary to have the right kind of gronnd connections, reaching clear down to permanent moisture in the earth. Felt or rnbber roofing is of no more use in taking electric discharges than wood. Farmers' Bulletin No. 367, Department of Agriculture, Washington, D. C., is worth reading on this qnestion. Rather than trnst to such connections as unskilled labor is likely to make from a metal roof to the ground, we shonld advise the nse of good lightning rods, bonght through reliable people and skillfnlly pnt up.

Tiling Heavy Soil

Query: Can crawfishy or gumbo land be successfully tiled? How can you tile a field which is lower on the back side than it is on the creek, making it necessary to go possibly four feet deeper at the creek bank?

A. S. E., Missouri.

Answer: Such land can usually be drained successfnlly. We have known of land which seemed almost pure gumbo to be reclaimed into splendid condition by underdrainage. There are soils, however, which are so impervions to water that such drainage is difficnlt, as the land sets tightly to the tile and prevents the water from getting into it. Our correspondent might make a test of this, if he is willing to wait, by laying a short line of tile to a discharge point and watching results. If after a year's settling the tile discharges a flow of water when the land is wet, he may feel satisfied that the drains will do their work.

If the services of an expert are obtainable it wonld be well to consnlt him and have him make an examination of the ground. The land described evidently needs to be laid off by a snrveyor, who will indicate where the tile shonld be run.

He will no doubt make a plan under which the water will all be brought together and discharged at a single opening through the four-foot elevation along the creek.

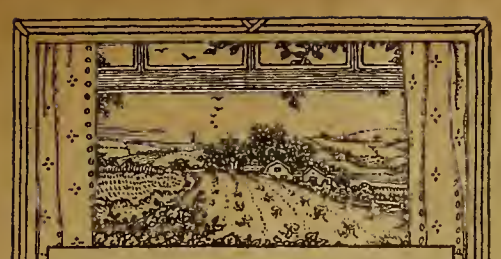
Shotes Eat Acorns

Query: We have ten shotes that are about seven months old. Should they be allowed to eat acorns when being fattened with corn? (Signed) A READER, Indiana.

Answer: Hogs that are fed plenty of corn and some green snccnlent feed like pastnre, green corn fodder, or roots will not eat snfficient acorns to injnre the flavor of the pork. That is our experience. Has anyone of our readers a different answer?

[This person did not sign his letter, and so we were not able to get out a reply to him as soon as it should have gone. Please sign your letters if you expect answers.]

E



Crops and Soils

Cover Crops and Fertility

By M. Roberts Conover

IF EVERY man who acquires land for farming would ask "What is in that land?" rather than "What can I take off the land?" he would follow safer methods for the future welfare of his land and himself. In mercantile life a man cannot diminish his working capital without stepping backward. Rather, he aims to increase it with a corresponding increase of profit.

At the end of the year he must have as much capital as when he began. What he takes out are only profits.

So with any of us. When we are ready to begin spring planting, our soil should be as rich or richer than the year before. Almost every farmer tries to put back something on his land. This replenishing is done in different ways and with widely varying results.

One farmer buys large quantities of chemicals every spring and applies nothing else with them. Another buys compost by the carload, using a little chemical fertilizer. Still another uses cover crops, planting them toward the close of each season; he also uses some fertilizer.

The first man is going the longest way round, and soil depletion will probably get there first.

The second man is making a short cut toward success, but at the prices and condition of manure as usually purchased he is paying highly for the privilege.

The third man will get there with the least aggregate expenditure and the least waste of values.

To get abreast of this scheme of soil improvement is a puzzling matter to some. Most of us are so busy at the time when cover crops should be planted—July, August, and September—that we cannot plow and prepare land anew. The time passes, and with it the opportunity for the growth of the soiling crop. But if this planting can be done when the ground is mellow with cultivation, cover-cropping can be done.

This is how one successful farmer manages: After the last cultivation of each crop, he scatters the seed of the cover crop not later than September 1st for any legume. This is harrowed in with a harrow-toothed cultivator. The work of gathering the crop at maturity does not destroy the young growth, and by winter he has a substantial growth for the benefit of the soil.

This method is good for all truck and small farms where intensive cultivation does not give time for the long crop rotations which those on extensive tracts may practice. Before beginning reconstructive measures on a run-down farm, get the advice of your state agricultural experts, as well as of some progressive farmer, concerning the soil under consideration. You do not lose your dignity by asking or writing for counsel. The best authorities do not claim to know all about every problem, and the exchange of ideas helps them too!

Makes Nitrates from Air

THE factory for making nitrates from the air now in operation at Niagara Falls produces 64,000 tons of calcium cyanamid a year. It employs 750 men, and uses 30,000 horsepower, derived from the Canadian cataract. The rest of the world, by means of waterpower, gathers this nitrogen product from the atmosphere in the following number of tons per year: Norway, 72,000; Sweden, 16,000; Italy, 34,000; Switzerland, 27,000; France, 7,500; Germany, 51,000; Austria-Hungary, 21,000; and Japan, 16,000.

Sudan Grass in Ohio

By Rolland A. Galliher

SUDAN grass fever is getting into the blood of many a farmer these days. The question is being raised, "Can this grass, which makes such remarkable yields in some Southern sections of this country, be successfully grown in the corn belt, or, say, in the latitude of Ohio, Indiana, Illinois, and adjoining States?"

Sudan grass is yet in the experimental stage, and farmers want to be shown by actual demonstration where this crop will and will not succeed.

My experience is limited to the present season, but I am convinced that Sudan grass can be profitably grown here in central Ohio, and that fields of this crop will soon be no more of a curiosity than corn is to-day.

After the spring planting was done, there was a small plot—just one twentieth of an acre—left, which we decided to plant to Sudan grass. But don't make light of the small size of my plot until I tell my story.

I sent to a Kansas seed house for one pound of Sudan-grass seed, plowed the ground eight inches deep and harrowed it thoroughly. No fertilizer of any kind was used.

The soil is a loose loam where potatoes were grown two previous seasons.

The seed was drilled in rows three feet apart the 10th of June, and covered about an inch. One half the seed was not used, which means that the plot was seeded at the rate of ten pounds per acre. The next time I'll sow only five or six pounds per acre, as my seeding was a little too thick. Next year I shall also sow the seed two weeks earlier if the weather is warm and the ground is in order.

The fourth day after planting the grass was up. Unusually cool weather followed, and the growth was rather slow. The 10th of July it had reached a height of two feet. That night some cattle broke into the patch and ate every blade close to the ground. Fortunately the weather turned warmer, and if ever anything "humped itself" that Sudan grass did. Perhaps the cattle helped its growth by clipping it, but none was left uneaten with which to compare the new growth.

August 15th one half of the patch was cut for hay. The stalks then measured 7½ feet in height—grown from July 10th to August 15th.

I had read of Sudan grass growing seven feet in seven weeks. It didn't seem possible then. It does now.

The half that was cut for hay—one

Man 5¾ feet tall. Grass 6 weeks old. Mr. Galliher is enthusiastic over Sudan grass

fortieth of an acre—made 150 pounds of cured hay, or at the rate of three tons per acre.

Two hoeings was all the cultivation this crop received.

AN EARLY wheat has been bred in Nebraska. It ripened this year before the rust struck it. It yields better than Turkey Red, but is not quite so good in quality. A quick-growing crop dodges much grief.

Soaked Clover Grows

DUGGAR and Tisdale of Alabama soaked bur-clover seed in water at ordinary temperature for four hours, and then scalded it for one minute in boiling water. By this means they caused 76 per cent of the seed to sprout as against only 8 per cent without treatment. The same method might well be experimented with other hard-coated legume seed. A Hughes scarifier, however, might do the trick more thoroughly and cheaply.

Hail to the Holiday Pie

FROM one cranberry-growing district in Wisconsin there were harvested and shipped during the last half of October a cranberry crop sufficient to make 1,155,000 holiday pies. This cranberry-pie timber filled 35 cars, each containing 220 barrels. Other cranberry-growing States report excellent crops of this berry, which revels in plenty of water.

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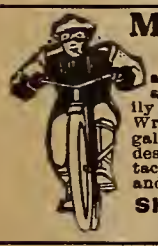

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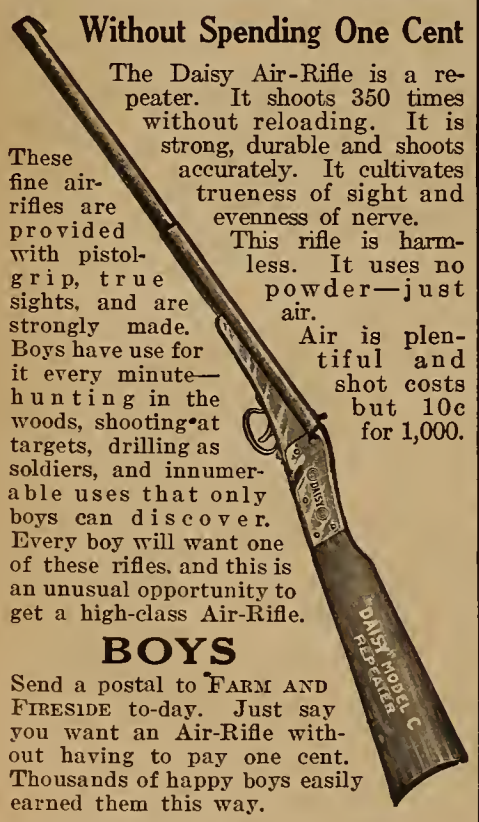

These fine air-rifles are provided with pistol-grip, true sights, and are strongly made. Boys have use for it every minute—hunting in the woods, shooting at targets, drilling as soldiers, and innumerable uses that only boys can discover. Every boy will want one of these rifles, and this is an unusual opportunity to get a high-class Air-Rifle.

The Daisy Air-Rifle is a repeater. It shoots 350 times without reloading. It is strong, durable and shoots accurately. It cultivates trueness of sight and evenness of nerve. This rifle is harmless. It uses no powder—just air. Air is plentiful and shot costs but 10c for 1,000.

BOYS

Send a postal to FARM AND FIRESIDE to-day. Just say you want an Air-Rifle without having to pay one cent. Thousands of happy boys easily earned them this way.

Write To-day. Address
FARM AND FIRESIDE
Springfield, Ohio

Agents $60 a Week

We want Special Agents to travel by Motorcycle selling our
300 Candle Power Outdoor Lamp and Safety Lantern
Burns Kerosene. Can't explode. Can't set fire to anything. Burns in all kinds of weather. Rain proof, wind proof, bug proof. For farmers, teamsters, hucksters, plumbers, dairymen, campers—everybody needs it.
This Motorcycle GIVEN

We furnish each representative with a motorcycle. This is no selling contest where only one person wins. Write for particulars how *anyone* can get this motorcycle
Thomas Mfg. Co., 3946 East St., Dayton, Ohio

Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

Boils

"ARE boils caused by bacteria, and what is the treatment for them?" asks a student.

Answer: As a general rule all boils are caused by bacterial infection, especially in those persons inclined to intestinal indigestion. As to the treatment, the intestinal tract should be thoroughly cleaned out, the diet properly regulated, the skin made pure and clean by hot baths; internally you might take calcium sulphide, one sixth to one third grain, every hour to saturation. Persistent and recurrent boils in patients should lead to an examination of the urine for sugar.

Your physician might want to determine just what germ or bacteria was causing the disease, so that he could use the proper vaccines or serums and cure the disease in that way.

Lime Water for Stomach

Will you please advise me in the use of lime water? Will its use, when prepared and taken as described below, harm the system or cause any bad after effects?

Slack four ounces of stone lime in water, then add enough water to make one gallon. Let stand three hours, then bottle, and seal tightly. Dose, two to three tablespoonfuls in a glass of milk at each meal, and before going to bed.

I used this for my stomach for several weeks and it seemed to help me, but did not know but it might have bad after effects, so stopped using it. Now I would like to know if it is safe to use for stomach trouble and if you would recommend it. Will give a brief description of my stomach trouble: Soon after I get up in the morning and before I have eaten, it feels weak and empty, as if I had not eaten anything for a day or more. It usually feels that way before each meal, but after I have eaten it seems to be all right—that is, the weak feeling is gone. In warm weather I have a great deal of trouble with my stomach; in cold weather it is not so bad.

RALPH H. FROELICH, Ohio.

Answer: Lime water, being practically harmless and especially soothing to inflamed mucous membranes, will allay gastric irritability and check excessive secretions.

You certainly used the maximum amount, which seemed to relieve your chronic gastritis or gastric catarrh. Given with milk it would not leave any bad after effect, especially if it is prepared and protected as you suggest by sealing it in bottles. It deteriorates rapidly if exposed to air.

You might take for your stomach trouble a cascara cathartic pill every night to keep the bowels open, and in the morning sip a cupful of hot water in which has been dissolved a teaspoonful of Carlsbad salts.

About Home Remedies

Because they will interest many more of our readers, a letter I received recently and the answer I wrote are reprinted.

This is the letter:

DEAR DOCTOR: I note that you are the editor of the "Good-Health Talks" in FARM AND FIRESIDE. I think this will be a valuable department to the paper. However, I think every family should have a good family doctor book for reference when one of the family is injured or taken sick and a doctor cannot be summoned immediately. As head of a family, I have had in mind purchasing such a book, but neglected it for the reason that I know of no one whom I thought would or could recommend a book such as I want. You are no doubt the person who could give me this information. I am enclosing a stamped return envelope, and am asking you where I can purchase a good "Home Doctor" book—one that will not take a pharmacist to understand. If you will furnish me the information desired, it will be greatly appreciated.

Yours very truly,
W. T. JONES, Indiana.

Here is my reply:

DEAR MR. JONES: I am very glad to have the privilege of answering your letter, and I hope what I have to say will be of some service to you.

We fully appreciate the compliment you pay us in asking us to decide this matter for you.

The books on domestic medicine that I find in homes are usually written or compiled by some selfish individual who is exploitiug some patent "cure-all" for financial considerations, or some mixture that he calls a medicine. Others are too technical or too exhaustive or too expensive, therefore are of no comparative value.

But the most important reason of all is this, that medical men who have had the necessary scientific traiuing aud qualifications, coupled with years of valuable experience, never trust their judgment alone in severe cases involving their own loved ones, comprising their family circle, but always seud for other competent physicians. The parents of the child are too much and too vitally concerned to be safe medical advisers for their loved ones in moments of intense excitement and anxiety.

If you cannot diagnose the disease, how can you tell what remedy to give? Aud the chances are that the remedy recommended is not at hand or obtainable.

Remember, in a case of emergency in sickness, as in other things, that the question is not so much what to do as what not to do. I shall never forget the advice given me, years ago, by my old professor, who said: "Remember this, throughout your medical career, that it requires more judgment to know what not to give than what to give; what not to do than what to do." This advice was as valuable as any I ever received.

Officious overdoing is usually useless and should be condemned. Before doing a thing or giving strong medicine, stop and cousider the after effects, the consequences, the sequel.

The advent of sudden affliction or sickness in the home is a time for cool heads, steady nerves, and ripe judgment. Do as little as possible; suppress excitement and emotion, and do just what good common sense and judgment dictates, and you will have done your full duty.

But we haven't answered your question yet, for you refer to circumstances remote from medical help. After some research and much study we think the book entitled "First Aid in Illness and Injury," by J. E. Pilcher, M. D., will be as near what you need as any with which we are familiar at this time. It has 208 illustrations, and the price is $2 net for the leather binding. Upon the receipt of the price I shall be glad to get a copy for you and forward it to you postpaid.

How to Get Sick

The following article contains so much rare good sense that we clip it from one of our valuable medical magazines for the benefit of our readers.

Read it and digest it, and then do the opposite.

Here are a few simple, certain, dead-easy ways of getting sick. They are guaranteed to produce results or you get your money back. If you don't believe it, try them once.

By hurrying through your meals and gulping down a lot of poorly cooked, unchewed "brickbats and mortar" by way of soggy biscuits and fat meat that would defy a goat's stomach.

By never smiling at meals, hut wearing a grouch and trying to make the rest of the family miserable.

By overeating and underexercise; by constipation, intemperance, and excesses; by everlasting hurrying, worrying, fretting, stewing, and strainiug to keep up appearances.

By sleeping with the windows closed, and by staying indoors all the time.

By drawing more out of your physical and nervous bank account every day than you restore.

By always reading medical books, medical ads, and trying to diagnose your own case, especially if you didn't have any case to start with.

By taking every old medicine recommended by your friends and neighbors.

By telling everybody else how badly you feel and trying to outpoint them in their petty ailments.

By enjoying poor health—yes, just that. There are a few people one occasionally meets who really enjoy poor health. They feel badly when they feel good because they are just sure they are going to feel worse afterward. Are you one of them?

Sensitive Nasal Membranes

Please let me know what the following symptoms indicate: The first day I experienced a terrible burning sensation which extends through the nasal cavity from my nose down into my throat; then possibly that afternoon or the second day a thin watery fluid flows from my eyes in such quantities that I can hardly stand the light of day. This lasts for about two days and then passes down into my throat, causing hoarseness and frequent coughing, also pains in the chest. The last stage usually lasts two or three days more. The total attack usually lasts not more than five to seven days.

Last summer I took a catarrh remedy for five months, and even though what catarrh I had was almost cured, I had one of these attacks. I am exposed to dust a good bit, being a farmer boy, and the attacks usually come on in winter when feeding hay or cutting corn, or when threshing. I never can tell whether it is really caused by dust, or whether I just take cold.

LAWRENCE MCKEE, Pennsylvania.

Answer: You certainly have a very sensitive nasal mucous membrane which is peculiarly susceptible to dust from corn fodder, moldy hay, or wheat. These poisonous gases are so irritating to your nasal mucous membrane that they cause a difficulty similar to hay fever. Often they cause severe chills.

The best treatment would be to keep out of the dusty corn and grain. But if this is not possible, use an ointment of: vaseline, 1 ounce; oil of cajeput, 1 drachm.

Mix thoroughly, and apply to the nasal cavity before going to work. If you should develop hay fever, have your physician use the serum treatment.

Ten-Second Topics

THE road-dust twins—drain and drag—are first aids to better highways.

WISCONSIN is developing an improved rye which is said to be much better than scrub rye.

A PILE of manure exposed to sun and rain for a year loses about one half of its fertilizing value.

AN ILLINOIS farmer says that a steer hide and a hog skin are among the best grain sacks a man can have.

ONE farmer in Wisconsin keeps his brood sows over winter on mangels, with very little grain.

CARROTS are sometimes fed to color the cow's butter. Milk is not richer when yellow, but only has more coloring matter from the cow's feed.

THIS last season was one of the years which convinced the farmer that it pays to stack his grain. It pays any year.

OVERHEAD jacks that come with portable grain dumps are excellent for hanging carcasses at butchering time.

THERE are fish farms to the area of 100,000 acres in Japan. A Boston newspaper states that these farms in 1912 yielded fish to the value of $2,050,000.

A GAS ENGINE gives out power because the gas is compressed and exploded. Unless the compression is good, the power will be wasted. Look after your valves; also your piston rings.

IN THE matter of making coke from coal with our wasteful practices of coking, we lost $40,000,000 in 1914 as compared with the more economical processes used in Europe.

A CLOVER HULLER was used by over fifty farmers in a clover-seed growing district of northern Wisconsin the first year it was purchased. This is co-operation that co-operates.

WHEN oats are no more expensive than corn, pound for pound, wise poultrymen will feed a fair proportion of this vigor-building food. Oats put quality into the muscle and nerve tissue of horse and hen.

THE first grange was organized at Fredonia, New York, April 15, 1868. Since that time over three million persons have been initiated in the order. In one month in 1874, 2,249 subordinate granges were organized.

A SIMPLE box trough four inches wide and four or five inches high, with a flat bottom, placed in the partition wall 18 inches from the floor, with a running board each side for the hens to stand on, makes one of the best feeding hoppers to be had.

A SOUTH CAROLINA farmer is growing colored cotton. He has grown, by careful seed-breeding, white, cream, tan, yellow, green, light brown, yellow-green, olive-green, and bronze cotton—and believes it possible to attain black! His name is A. E. Brabham.

THE usual practice is to propagate rhubarb from pieces of root, but it is practical and easy to grow the plants from seed. By planting seed in very rich, well-prepared soil where the plants are to remain permanently, stalks may be had ready for cutting about as soon as when root-planting is followed.

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Adopting a Boy

The Value of a Youngster in the Farm Home

By HILDA RICHMOND

ONE of our neighbors, after vainly trying to get competent help on his farm, exclaimed in despair: "Well, I guess I'll have to try a children's home and get a good, strong boy for the farm. It seems to be the last resort."

The man in the little group to whom he addressed his remarks shook his head gloomily and "allowed" that that plan would fail also. He had seen it tried many times and it had always failed.

And then the minds of some of the listeners ran quickly backward to the people who had adopted good, strong boys for the farm in days gone by. We remembered some failures and some successes, but a certain dissatisfaction with the experiment seemed almost universal.

The new member of the family

I wonder why it is that the adopted child always has to be and do something wonderful before people are satisfied that he is a success.

Not long ago a man who has placed almost 800 dependent children in homes said to me that when a farmer goes to him seeking a boy he always questions the farmer pretty sharply as to his motive. When the man begins to talk about the scarcity of farm labor and how much a good boy can do, dwelling particularly on the fact that he can save a man's wages most of the year, he usually discourages the applicant. But when the farmer discusses the advantages to the boy of a good home, good school, and suitable clothes and food, then he recognizes the right kind of a foster father.

"He'll have to work," one man said; "we all do. But at the same time I won't overwork him. I want to do more for the boy than I require him to do for me."

In that last sentence lies almost the whole secret of success with adopted boys and girls. The men and women in our neighborhood who took boys years ago for what they could do for the lads rather than for what the lads could do for them, almost all lived to see their foster sons a credit to the community. I know there are exceptions to the rule, but the old words of the Bible, "Train up a child in the way he should go," are still true. Most of the boys who were trained to give more than they received by the good example of charitable men and women grew up to feel that they, too, owed a debt to humanity, while the ones who were adopted merely to save the price of a hired man did not turn out so well. Somehow the daily example of trying "to do" somebody had its effect on their lives.

Taking a "good, strong boy" for farm or country is harder than adopting a baby or a little child. Somebody has said, "There is a time in every boy's life when nobody loves him but his mother, and she has a hard time of it.' This is the period when orphan boys are usually sought as farm help. One must have patience and a sincere desire to help the boy if one is going to make him efficient and lovable.

But from a money standpoint is it profitable to adopt a boy for assistance on the farm? Yes, it is, provided the farmer and his wife are willing to pay the price in love and sympathy and unfailing patience. A boy will leave gates open, break things, forget and lose things, but he is worth while even from a money standpoint. He will "make a hand" in summer at all light work, and be glad to do it. If a boy can drive a team he is as happy as a sunflower. He will do innumerable chores and save thousands of steps for the farmer and his wife. His clothes cost very little in the summer, but it is true that he can out-eat any two men on the place.

When it comes to the higher, finer considerations, no one can measure what four or five years on a good farm in a good home will do for an orphan boy even at the trying age. "My second mother" is the way a prosperous man refers to the woman who brought him up. He laughingly tells how she made him "walk the chalk," and how he thought under her administration the chores never would be done. But he also dwells lovingly on the way she supplied his boy's hearty appetite, mended his clothes, made him go to school every school day, and firmly held him to church and Sunday school when he wanted to beg off. Do that farmer and his wife think it paid them to adopt that homeless lad ready to go to the bad in town for lack of oversight and care? They know it did, and they have ever since advised farmers to do as much for orphan children. A human life is the most profitable investment any farmer can buy. And even if success should not come, as men count success, there will always be the satisfaction of duty done and an honest effort made to do humanity a service.

Blessings on the farmers and their wives who want good, strong boys for what they can do for the lads and are willing to take the other part on trust! May their number increase as the sands of the sea until every orphans' home in the land will be merely a place of detention until proper homes can be found for children.

Puzzles for the Evening Fireside

Land-Division Puzzle

An old ranchman owning a square mile of land in the West decided to divide his land between his sons. He reserved 40 acres, or one sixteenth of the section, for himself, and divided the balance into five farms of the same size and shape, and gave one to each of his five sons. Can you tell how the land was divided?

Animal Crossword Enigma

In wolf, not in bear;
In mouse, not in hare;
In lynx, not in camel;
My whole is a mammal.

Enigmatic Flowers

1. What flower is an hour of the day? 2. What flower is a woman's article of dress? 3. What flower is a cunning animal and a covering for the hand? 4. What flower is a bird and a goad? 5. What flower is a Christmas green and a Rhenish wine? 6. What flower do we always remember? 7. What flower is a musical instrument? 8. What flower is a delicate color?

Hidden Birds

R B R A L O
A O I K I O
T N M T N R
S E R R E Y
A L B A O R
G E I L W C

How many names of birds can you find among the letters above, using only the letters that join each other, either up, down, across, or diagonally?

NOTE: Other puzzles will be printed from time to time. Answers to these puzzles will be given in the next issue.

HOW TO GET THIS $2.25 ALUMINUM GRIDDLE AT A SAVING OF $1.40

Get 50 cents worth of Karo from your grocer, and send the labels to us together with 85 cents and we'll send you this $2.25 Solid Aluminum Griddle by prepaid parcel post.

HERE is a clean cash saving of $1.40—and thousands of housewives have already taken advantage of this remarkable chance to get an aluminum griddle for less than the wholesale price.

This Aluminum Griddle needs *no greasing*. It doesn't chip or rust. It heats *uniformly* over entire baking surface—doesn't burn the cakes in one spot and leave them underdone in another. It doesn't smoke up the kitchen—and the cakes are more *digestible* than when fried in grease.

At great expense we are seeking to place a Karo Aluminum Griddle in the homes of all Karo users, so that Karo—the famous spread for griddle cakes and waffles—may be served on the most deliciously baked cakes that can be made.

You know Karo, of course. Nearly everybody does—65,000,000 cans sold last year alone. And you doubtless know the wonderful cleanliness and durability of Aluminum ware.

If you are a Karo user already then you know all about this wonderful syrup—you know how fine it is as a spread for bread; how delicious it is with griddle cakes, waffles, hot biscuits and corn bread.

Get 50 cents worth of Karo from your grocer at once, and send the labels and 85 cents (P. O. money order or stamps) to us and get one of these Aluminum Griddles by prepaid parcel post.

Remember that our supply is going fast—so get your Karo today. We will also send you free one of the famous Corn Products Cook Books.

Corn Products Refining Company
P. O. Box 161 New York Dept. 110

Representatives Wanted

To solicit *New* and *Renewal* subscriptions to *Farm and Fireside*. Liberal proposition to persons giving all or part time.

Write To-day to

Agents' Bureau, Farm and Fireside, Springfield, Ohio

THIS IS "DAPPLE"

A silky Chestnut Pony, given to Ernest L. Heckert, of Pennsylvania. Ernest says: "'Dapple' likes anything good to eat and is especially fond of cracked corn, oats and bran mixed. We have a big yard and he keeps it mowed. Besides being speedy, 'Dapple' is very intelligent and can repeat things after he is shown two or three times. I hold an apple in my hand and 'Dapple' bites it off just like a little boy. He was scarcely more than a stranger here until he walked into the kitchen and picked them off the table."

THIS IS "BEAUTY"

Given to little Miss Evelyne Russel, of Arkansas. She says: "Just received my darling pony 'Beauty' and can't tell you how proud I am. Papa went to the train but she didn't come, so mamma and I went to meet the next train. The expressman commenced to halloo and tell me the pony had come. I could hardly wait for the train to stop. She is the dearest little Pony in the world. She seems to be well satisfied in her new home."

We Have Given Away 342 Ponies
If You Want One—Write Quickly

PONY BOOK FREE We have a big Pony book, full of pictures and stories of Shetland Ponies, written by happy boys and girls to whom we gave them. Send your name and address for free copy. You never read such a wonderful book. 342 boys and girls already made happy with one of these darling Shetland Ponies, each with buggy, harness, saddle, bridle, and blanket—all free—sent prepaid. Outfit is easily worth $200.

Who is the next boy or girl to have one? Speak quickly, children, or have your parents write. We want to give away 100 more—but they won't last long. Every child has an equal chance, no matter where you live.

Write us a postcard or letter today. Just say: "Send me your Big Free Pony Book, showing pictures and stories of many of the 342 Ponies you have given away, and tell me how to win one." Address

TO PARENTS Have you a boy or girl, 6 to 12 years old? If so, why not let the child try for one of these ponies? Shetlands make wonderful playmates—gentle, well mannered, lovable, quick to learn. Nothing develops kindness, appreciation, self-reliance in a child so much as to own a Shetland Pony.

We make it easy for your child to earn one—a little work that's mostly play, a little perseverance that is good for the child—and the Pony is won. Many a child today is riding a Pony of its own, whose parents thought could never win. Besides, we pay cash to all who do not earn a Pony. Send for our Free Pony Book and then decide.

This is the most remarkable collection of Shetland Pony pictures and stories ever gathered together—as fascinating a book as "Black Beauty"—and you'll enjoy it as much as the children.

THE FARMER'S WIFE PONY CLUB, 591 Webb Bldg., St. Paul, Minn.

THIS IS "DOLLY"

Given to George Edwin Adams, of New York. "Dolly" is a beautiful black and white pony. George writes: "I drive my pony to school, which is in town and a mile and a half away. I take her grain with me and at noon when I go in the barn to feed her she always asks for it. "All my friends think she is just fine and would like her for their very own."

The Baited Trap

A Story in Five Parts by Edwin Baird

Illustrated by ROBERT AMICK

WITHOUT a word, Bob seated himself beside his father, who started the horse by the simple process of rattling the buggy whip iu its holder. As they bowled smartly through the clear, snappy morniug in the direction of the railway station Bob cleared his throat gently and said, with a calm eveuness that effectually disguised his inner turmoil:

"I guess, Dad, it hasn't occurred to you that—"

His father, unwontedly impatient, interrupted him curtly:

"If you're still harpin' on my business trausactions, stop right where you are! I don't waut to hear uo more about it—from you!"

Except for a slight narrowing of his eyes Bob, apparently, was unmoved.

"What I started to say," he weut on evenly, without raising his voice, "is that what you're doin'—tryin' to do—is again' the law. That's all."

"Well, what if it is?"

"Nothin', except that they might—they could—" Bob stopped, and pulled frowuingly at the lobe of his left ear, his left elbow cupped in the palm of his right hand. The words he wished to utter clung to his throat.

"Well. well!" barked the old man, moviug irritably. "Go on! go on!" His usual phlegmatic self-control was going to pieces.

"Well, the fact is," continued Bob, looking away from his father, "they could put a man in jail for doin' what you're tryin' to do."

For a matter of tweuty rods an unpleasaut silence hung between them, like the cold, keen blade of a sword. Then the older man leaned forward, took the buggy whip in his hand and laid it across the rump of the mare. It was the first time, to Bob's knowledge, that a whip had ever beeu used on one of the Yates' horses.

With the light vehicle rattling at accelerated speed along the country road, his father said:

"Are you tryin' to skeer me, Bob?"

"I'm only tryin' to save you."

The old man wagged his head slowly, while his pale blue eyes half closed aud his mouth drew down at the corners in a strange, mirthless smile. Curiously, he had quite recovered his habitual uncoucern, and Bob, who knew him thoroughly, saw that he was secretly ashamed of his upflare a minute ago.

"That's mighty kind iu you, Bob," said he with mild sarcasm. "But I wasn't aware I needed uo savin'."

"Well, *I'm* aware of it," said Bob warmly. "And so is Mother."

"Sure enough? Well, I don't need your advice, my son, nor your help, neither. When I do I'll let you know. Meantime, kindly let me run my own affairs in my own way."

"Don't forget," warned Bob, breathing rapidly, "that what you're planniug to do is illegal."

" 'Tain't likely I'll even think of it," commented the old man. He was sitting forward, his right forearm resting on his knee, thus allowing a goodly slack in the reins, which dangled loosely from his hand. The mare had slowed to a comfortable trot. "Auyways," he resumed, after a meditative pause, "I'm safe. I don't blab my business around like some folks."

"And another thing," said Bob, finding it difficult to speak what was in his miud, yet feeliug that he must—"I know Frank Sherwood, remember. We both live at the same house in Chicago. Did you forget that, Dad?"

V

FROM the tail of his eye he saw his father's raw-boned fingers tighten spasmodically ou the reins, saw his brick-red under jaw move forward stubbornly, and both movements, though slight, indicated a dogged obstinacy that would recognize no opposing view. In that instant Bob knew a profound pity for his father. There was, somehow, a certain pathos in his unyielding resolution.

The remaining short distauce to the station was accomplished in a sileuce that was heavily uncomfortable to Bob, since it allowed him time to reflect upon what he had said, and construe it in a light unfavorable to himself. When he alighted upon the platform his father leaued down from his seat and, looking the young man steadily in the eye, asked in a hard voice:

"I guess you'll see Sherwood when you get back to Chicago?"

Bob nodded.

"He'll probably be the first man I'll speak to—as a friend. I don't know many people in Chicago."

The elder Yates straightened up and looked around stealthily. Nobody was within earshot, but he lowered his voice almost to a whisper.

"What you gouna tell him?"

"I dou't know—yet. I've been tryin' to think. I tried to thrash it out last night iu bed, but I didn't get anywhere. I couldu't decide what to do. Maybe I'll decide on the train. I only hope I'll be strong enough to do the honest thing."

"What would you call the 'honest thing', Bob—bein' loyal to your pa who raised you, or divulgin' family secrets to some uew acquaintance?"

"That," said Bob, pinching the lobe of his left ear and staring thoughtfully at the ground, "is something I'm gonna try to decide before I reach Chicago." He picked up his valise, then held out his hand to the man in the phaeton. "Good-by, Dad."

The whistle of his traiu sang crisply ou the clear, cold air of the autumn moruiug.

It was mid-afteruoon of a gorgeous autumu day when Bob climbed the rickety staircase in Mrs. McNally's rooming house, but when he reached the upper landiug he saw that Sherwood was in his room, apparently oblivious to the lure of the glorious outdoors.

He paused on the threshold of the opeu door, and in his slow, methodical way put dowu his valise and pushed his hat back from his brow.

"Howdy, Mr. Sherwood!" he greeted. "I'd like to talk over a little matter with you—if you've got t-time." His voice broke slightly on the last word. For an hour and a half he had screwed up his courage to meet this situation, and now that he faced the crisis he was afraid he was going to flunk. There was a very perceptible chill in the gloomy house, but two rivulets of perspiration trickled dowu his face—which, oddly, was white, not red—and he was disgusted to know that his fingers were clammy and nervous.

Sherwood, who had been vociferously whistling a half-forgotten air from a late musical "show," broke off on a high note and looked up from a bundle of laundry he was opeuing ou the bed; then, round face radiaut with welcome and good cheer, he came ebulliently toward Bob, with his right hand extended.

"Miss Sherwood? She's not with us any more"

"Hello, Mr. Yates! By George, I'm glad to see you back! Mrs. McNally was telling me you'd gone away—she wasn't sure where—and I was a little afraid you weren't coming back. Come in. Sit down. Here, sit on the bed."

The exhilarating youug man swept the laundry and half a dozen other parcels from the bed; and Bob, as he seated himself on the edge, became aware that the bureau, washstand, aud chairs were laden with the impedimenta that generally denote a hasty exodus. Suitcases, clothing, books, hair brushes, neckties, papers, and a myriad other articles were scattered about in hurried confusiou—a certain indication that Sherwood, whose life was ruled by ueatness and order, had experienced some overwhelming excitement.

"I've got something to tell you—" began Bob, running a large haudkerchief over his moist brow.

"Yes, so you said," eucouraged Sherwood, who was leauing against the bureau, looking down at his guest. "I've somethiug to tell you too; something of vast importance—to me, auyhow. But go ahead, Mr. Yates."

His round, good-natured face was alight with sunny smiles. He seemed unable to stop smiling.

Bob was slowly wiping his fingers, one by one, on the handkerchief, and he was regarding the operation with knitted brows, as oue who would solve some intricate puzzle. Presently, with an abrupt movement, he took two five-ceut cigars from a vest pocket and held them toward Sherwood.

"Have a smoke," he invited. And he was repeating to himself: "It's now or never—now or never! I'd better tell him now and have it over with."

But the thing he would utter found no voice. Coming in on the train he had decided definitely to tell Sherwood all. Ascending the stairs, a while ago, he had even shaped iu his mind the exact words he would use. But the crucial moment had come and gone, and the words had not been spoken. It was harder to speak them now thau it was then. Why hadn't he spoken them then? Why hadn't he told Sherwood the instant he stopped at the door? . . .

Sherwood's voice cut gayly through his brown study:

"Mr. Yates, I can't hold in any louger. I've got to tell you the glad uews. *I'm a bona-fide farmer!*"

Bob looked up with a puzzled expressiou.

"You mean you've bought a farm?"

"Exactly," chuckled Sherwood around his cigar, which he was smoking zestfully. "I don't supose you can appreciate just how I feel about it, because you've been used to a farm all your life, while I never have. But I've always wanted to live ou a farm, and now that I've got one—*own* oue—"

"Which place did you buy?" interposed Bob, trying, in his laborious way, to adjust his thoughts to this new phase.

"Whose do you suppose? Your father's, of course."

It seemed to Bob as if every uerve and fiber in his body jumped simultaueously. He had an inordinate impulse to leap to his feet, but he sat perfectly still, aud beyond a sudden clenching of his teeth on the cigar in his mouth there was no physical manifestation of the sudden shock to his senses. One's inborn characteristics are uever so pronounced as in moments of great stress.

"You say you've bought my father's farm?" he asked evenly. There was a vertical line between his blond brows. He couldn't understand the thing, at all.

"Sure. Less than an hour ago." Sherwood motioned around the room with his cigar. "That accounts for the chaotic jumble. It's not like me—this mess. But I'm going out this afternoon to take charge, and I've been packing like a whirlwind. I'm so excited I can't think. Looks silly to you, I suppose; but a fellow doesn't buy a big farm every day."

There were two vertical lines now in Bob's brow.

"I haven't got it straight yet, Mr. Sherwood," said he. "You say you bought our place less than au hour ago. But my father is not in Chicago, and hasn't been here for months. How—"

"By wire," explained young Sherwood, smiling broadly. "Your father telegraphed me to-day that he had another bidder for his property, aud offered me a substantial advantage for an immediate sale. As I'd already decided to buy the farm anyway, of course I snapped up his offer quick as a wink. Hello! Not going!"

"Yes," said Bob, who had started for the door. "I had a pretty rocky trip coming in and I'm all played out."

"But you said you had something—"

"It'll keep," said Bob, without looking back. "Some other day, maybe, we'll talk it over." He turned at the threshold and looked at the brown-eyed young man who had taken a tentative step after him. With an emotional fervor, quite strange to his voice, he said: "Best of luck to you, Mr. Sherwood—and God be with you!"

Then he picked up his valise aud went hurriedly into his room aud closed the door behind him.

VI

TWO days after Sherwood's departure Bob got a letter from his mother, saying the deal had beeu closed, the farm sold, and that they were moving forthwith to Peoria. At the end of the letter was an underscored appeal: "*Pray, Bob, for your poor, misguided father.*"

But Bob, for all his uprightness, had forgotten how to pray. He never went to church any more. Thus far had he fallen into the custom of Chicago's floating population. Indeed, were the matter put to him squarely he might have doubted that there was such a thing as a church in Chicago. He had never seen oue. Nobody he knew ever went to oue.

Within the week his parents were established in their new home, and thereafter, at irregular intervals, he visited them, although still preferring to live in Chicago. Presently the lives of these three settled into the aimless, uneventful grooves that are traveled, more or less conteutedly, by most of us, and the weeks and months passed in an uuhurried procession of days that were all exactly alike, all commouplace. But there were two things that this leisurely passage of time could uot obliterate.

Although uoue of them ever alluded to Sherwood, or to the fraud against him, the memory of both was never quite erased from their minds. Bob sensed it every time he journeyed to Peoria. It hovered in the new house like an evil bird, fluttering invisible, noxious wings. They all thought of it; uone spoke of it.

Bob never heard from Sherwood. He hadn't expected to. And ou the whole he was rather glad that Sherwood didn't write. Many a time since that last talk with him he had, with his mind's eye, seen the sunny-natured young man discovering the trick that had been played upon him. Sometimes these mental pictures were quite vivid: he could see Sherwood happily contemplating the fictitious bumper crops, and then, slowly and at a ruinous cost, learning the worthlessness of the worn-out soil, and finally surrouuded

EW

by losses, weighed down with two mortgages, standing face to face with utter failure. . . . Yes, he was glad that Sherwood didn't write. In the circumstances, he felt that an unbroken silence was the wisest course for both of them.

Nor could Bob forget Dolores Sherwood. He experienced a sudden quickening of the pulse every time he saw her picture—and he saw it often, for he bought great quantities of current magazines, with the eager hope of finding her fresh young face attracting attention to various brands of perfumery, washing powders, breakfast foods, motor cars, kitchen cabinets.

It never occurred to him that his love affair—if such it could be called—was an absurdity. He had lost sight of the fundamental fact that he was infatuated with the photograph of a girl whom he did not know and had never seen. He was troubled only by the consciousness that she was married to another, and that his passion, therefore, was hopeless—and by the equally distressing knowledge that his father had shamefully wronged her brother, thereby permanently estranging them and their families.

Had he not met Sherwood, it is entirely probable that Bob's tenderer side would have been unmoved by the repeated sight of her picture. Since he had known her brother, he felt that in a sense he had known her also—would surely have known her but for unforeseen events.

True, he had lost her; but that needn't prevent his gazing adoringly at her photograph. He fell to clipping some of them from the magazines and pasting them about the walls of his room; and at last, on one especially lonely evening, he wrote to one of the advertisers, requesting her address. He had, several times prior to this, considered communicating with Sherwood, if only to get a scrap of news concerning his sister, but each time he reached the same conclusion: their tacit acceptance of one another's position had better remain mute.

He learned promptly that all advertisements bearing her photograph were placed through a Chicago advertising agency, the name of which was given. It was several weeks, though, before he summoned the courage to call at this place and state his errand. A thin, spectacled young man looked him over curiously before answering:

"Miss Sherwood? She's not with us any more. Stopped posing this summer."

"But these pictures—"

"All taken last winter."

Bob moistened his lips.

"Is she—married?" he demanded.

The thin young man, in the act of removing a half-tone cut from a stack of proofs, bent his narrow brows upon Bob in a sharp scrutiny.

"Can't say," he replied. "Heard she was engaged to a Peoria man. Oscar something or other."

"Do you know where she's living?"

The other shook his head, his spectacled eyes bent upon the proof sheets with a counterfeit absorption, which plainly indicated that as far as he was concerned the interview was over.

Bob felt suddenly very big and awkward and embarrassed. He experienced a momentary hot desire to somehow snub this upstart, whom he could have crushed like a gnat in one of his muscular hands.

Without glancing up from his desk—without, indeed, taking the slightest notice of Bob—the thin young man asked crisply:

"Anything more you want?"

"Yes," said Bob, in his ponderous way, "there is." He took an old envelope from his coat pocket, bearing his name and address, and attached thereto a new one-dollar banknote. "If you hear anything of Miss Sherwood," he said, somewhat as he would address a waiter in a quick-lunch establishment, "kindly drop me a word at this address. There's a dollar for your trouble."

Whereupon he laid money and envelope upon the young man's desk and turned on his heel and strode from the office.

A drizzling rain had set in when he reached the street, and a heavy mist was advancing upon the city from Lake Michigan. It lacked half an hour of four o'clock, but already the office buildings and stores were a-twinkle with electric lights, and so were the street cars and automobiles. In the caverns of the "Loop" it was night.

A sudden, sweeping distaste for Chicago broke upon Bob like a crushing billow. He could not explain it—he had never felt so before. He only knew that now, this minute, with the rattle and roar of Chicago in his ears, with the smell of it in his nostrils, with the sight of its midday darkness before his eyes, he wanted to get away from it—far away, among the open fields. . . . He found himself walking rapidly in the direction of the Northwestern Railway station, with some half-formed idea in mind of taking the first train for Wisconsin. He would see Sherwood and have a long talk with him. And he would hear something of Dolores.

But his plan, born of a moment's wild impulse, never matured. Before he was halfway to the station he stopped, then took a car for his work—but not because he wanted to hold his job. The same thought which many times before had restrained him from visiting Sherwood held him back now. Sherwood, he reasoned, would not care to see any member of the Yates family, and Bob's pride forbade his going any place where he was not assured of a welcome.

And so, for a space, there ceased to be any concrete manifestation of Bob Yates's strange passion for Dolores Sherwood, though he worshiped her no less devoutly in the abstract.

VII

THE dollar with which Bob had attempted to squelch the thin young man in spectacles bore rich and wholly unexpected fruit the following spring. It came in the form of a brief note:

I really shouldn't write you this [wrote the unsquelched young man], because, for all I know, you may be a dangerous maniac, with seven or eight bowie knives hidden in your clothes, and I can't even hazard a guess as to your object in wanting to see Miss Dolores Sherwood. But I'll take a chance. Besides, I've got to do something to earn that dollar.

If you're still languishing for a sight of Miss Sherwood, you can see her any day this week, from 1 to 11 P. M., at the Castle Music Hall, where she is playing a vaudeville engagement.

At this point Bob stopped reading and, seizing a morning newspaper from the hat rack in Mrs. McNally's lower hall, where he had found and opened his letter, he turned hastily to the theatrical advertisements. He ran his eye down the column until he came to the announcement of the Castle Music Hall, and—yes, there it was!

SHERWOOD AND FISHER

That was all. No word about who or what Fisher was. Nothing about the nature of their act. Just—"Sherwood and Fisher." He returned to the letter:

—where she is playing a vaudeville engagement. She adopted the stage about six weeks ago, I hear, and is doing a stunt with a girl named Annie Fisher. The two of them are a pair of pippins. Go see 'em for yourself if you don't believe me.

Don't get the mistaken impression, old top, that I'm press-agenting this show. I'm not. I'm merely trying to earn my dollar. To be perfectly frank, their sketch is rotten. But they are a couple of peaches. Don't miss 'em! [TO BE CONTINUED]

EW

Father Time's Passing

By Annie L. Shepherd

THIS entertainment for school, home, or literary society may be worked up without much labor or expense.

The "throne" room is dimly lighted by gas or candles. The throne itself is a great chair elevated and covered with a fur rug, and is approached by two or three rug-covered steps. Old Father Time dresses in a sheet of white, wears a snowy wig, has long whiskers, and carries an hourglass and scythe. He should be quite bent and full of trembling.

The little New Year, a boy of four or five years, in white, bears a banner showing the date of the new year. Each month is represented. January wears two false faces, one over the face and one over the back of the head, like Janus of old, the god of the New Year, who looked both forward and backward. Upon his breast he bears an immense bank-calendar leaf with the date January 1.

February, draped in a flag or bunting, carries an immense hatchet and large bunch of artificial cherries.

March is a kite-flying boy.

April is a king's jester (April fool).

May shows "Miss Columbia" bearing flag at half-mast and victor's wreath.

June, in snowy, gauzy white, is laden with roses, wreath-crowned.

July is patriotic "Uncle Sam" with firecrackers "to burn."

August, in filmy white, carries an immense fan, using it continuously.

September shows a schoolboy.

October suggests Hallowe'en.

November's "Pilgrim" maid displays her basket of fruits and vegetables.

December cheer brings old Santa dear.

Father Time appears and beholds vacant throne. He then passes on toward open door, frequently looking back at throne. He stands at the door and beckons. The months appear singly, and in silence seat themselves upon the steps of the throne. He tries to recall them, beckoning. At one minute before twelve o'clock he staggers out, while rushing in joyously the little New Year comes to the throne. The months rise and wave greeting, when all join in singing "The Doxology."

Dr. Wiley says:

"Neglected Teeth are more dangerous than smallpox."

See Good Housekeeping—March, 1915—p. 324.

Dr. Osler says:

"Oral hygiene, the hygiene of the mouth—there is not one single thing more important to the public in the whole range of hygiene." See Dental Hygiene—p. 3.

Dr. Richard Grady (U. S. Naval Surgeon at Annapolis) says:

"The tooth-brush drill is as needful as any gymnastic exercise." See Dental Hygiene—p. 5.

The N. Y. Sun says:

"Teeth bad—boy bad."

Interview with Mr. C. D. Hilles, formerly Sec'y to President Taft and now President N. Y. Juvenile Association.

N. Y. Sun, July 8, 1914.

The N. Y. Times says:

"Bad teeth are playing havoc with the troops. No soldier is any better than his teeth."

N. Y. Times, December 20, 1914.

Care for your teeth with this delicious, efficient dentifrice—

Trial tube and a copy of Dental Hygiene sent for 4c in stamps.

COLGATE & CO.
Dept. 89, 199 Fulton St., New York

OUR "PRETTY GIRL" CALENDAR AND FARM AND FIRESIDE, One Year For 50c

This Offer Good to January 15th, Only

THE ROSES' FRAGRANT MESSAGE

This illustration of the first picture of the Calendar can give but a limited idea of its exquisite daintiness. Remember, it consists of *Three* sheets and is printed in *Ten Colors.*

BY A STROKE of good fortune we have secured another small supply of 1916 Calendars from our printer. We were entirely out just before Christmas, but are filling orders as fast as possible from the new supply. If you were late in getting your calendar you will understand why. We hope to be able to keep a Calendar for every subscriber but urge that you rush your order as they are going like "hot cakes." This is

THE HANDSOMEST CALENDAR WE HAVE EVER OFFERED

It consists of reproductions of *Three Great Paintings* by *Celebrated Artists,* mounted on Art Board Cards, size 11x17 inches. The Calendar squares are arranged so that they do not mar the beauty of the cards in case you want to cut them off and have the pictures framed. Each picture is

PRINTED IN TEN COLORS

and is a masterpiece of the printers' art. Every color is exquisitely blended into a perfect whole. The Calendar appears to have come fresh from the artist's brush. The titles of the pictures are, *"The Rose's Fragrant Message," "The Sign of Surrender,"* and *"Here They Come."*

The Calendar is given with each new or renewal yearly subscription to *Farm and Fireside* at 50c. Even if your old subscription has some time to run, you should renew now and get one of these beautiful Calendars. Your subscription will be extended.

Clip the Coupon and Send Your Order To-day

SPECIAL CALENDAR COUPON

FARM AND FIRESIDE
Springfield, Ohio

Enclosed find 50c for which please renew my subscription to *Farm and Fireside* for one year and also send me one *Art Calendar Free and Postpaid.* It is understood that I can purchase additional copies of the Calendar at 50c each.

Name .....

P. O. .....R. F. D. No.....State.....

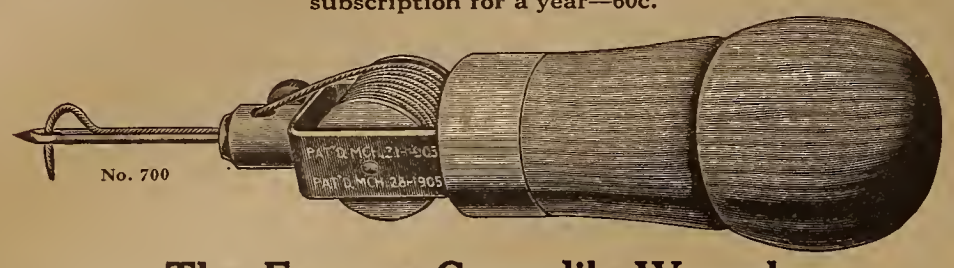
Jan. 1

Two Articles of Utility
In Every Rural Home

You can have your choice of either one with your renewal subscription to FARM AND FIRESIDE, or as a reward for getting up a small club of subscriptions at the special club rate of 35c each.

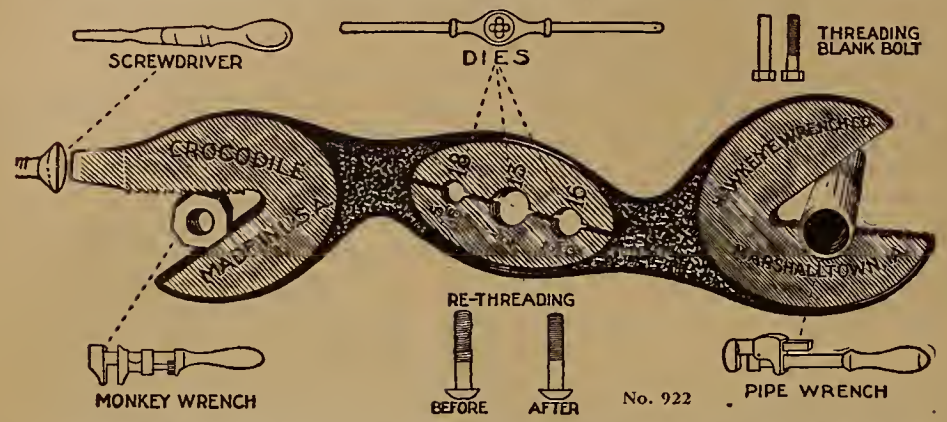
Lock-Stitch Sewing Awl

Sent FREE for a club of TWO subscriptions at 35c each or with your own subscription for a year—60c.



The Famous Crocodile Wrench

Sent FREE for a club of THREE subscriptions at 35c each or with your own subscription for a year—70c.



Here is an opportunity to secure an extremely useful article. The sewing awl is a high-grade tool which can be used for sewing harness, boots, shoes, etc. The wrench is made of tool steel, and can be used for general utility purposes. It is 8½ inches long, compact and practical.

SEND YOUR ORDER ON FORM BELOW

FARM AND FIRESIDE, Springfield, Ohio

Find enclosed $..... for which send me *Farm and Fireside* one year and

.....
(Name premium desired)

Name .....R. F. D. .....

Post Office ..... State .....

NOTE:—If you send a club, write names and addresses on separate sheet and attach to this form bearing your name. YOUR subscription can be one in your club.

Jan. 1

The Next Issue News

Volume I Farm and Fireside Editor's Office *Number 3*

Where the Profit is in Beef

One cattle feeder in Iowa will be lucky if he doesn't lose more than $25 a head on the 300 head of cattle he bought last fall for the feed lot. And he is one of many feeders in the United States who aren't making any money in the cattle-feeding business. Why do these men continue to pay such high prices for feeders when there is little or no profit in feeding such high-priced feeders? There is a profit made in the beef industry. Where is it? These questions are answered in an article by John Cownie in the next issue of FARM AND FIRESIDE, the January 15th number.

Train the Dogs to Help You

Anyone who has tried to round up and house without help a flock of chickens, a bunch of calves, or a flock of sheep will be interested in "How to Train Farm Dogs," written by Jennie Roberts. Mrs. Roberts tells how Gyp and Rover were taught to help with the work and what words they understand, in an article in the next issue.

Gyp drives chickens

Farm Wages are on the Up-Grade

While the average wage of hired hands in the United States is $21.05 a month, which isn't much, the wage-trend is upgrade. Since 1900 the wages of men working in cities has increased 22 per cent, whereas farm labor has gone up 37 per cent. Most men in the city have to get up at six or seven o'clock in the morning to get to their work on time; even if they work only eight hours in the shop or factory. These are a few of the many things about farm labor discussed in an article by D. S. Burch in the next issue.

Do You Suffer from Nasal Catarrh?

If you have nasal catarrh, your present location doesn't help you, and you still want to make a decent living farming, you will be interested in the Good-Health Talks by Dr. David E. Spahr in the next issue.

To Interest a Child in Live Stock

"Oh, Daddy," piped little Joe, "how can a sheep see to eat and walk if its eyes are always covered up with that pretty wool?" Grown-ups as well as children will enjoy this interesting and informational article by John Y. Beaty in the next issue, the January 15th number.

Makes Money With Winter Lettuce

With a few hundred dollars invested in a small hothouse, and with a limited market, Stephen Hyde, a Missouri farmer, began ten years ago to raise lettuce for the winter markets. Now he has three acres under glass and makes a lot of money. Cecil Brown tells in the next issue how Mr. Hyde made his success.

Hired hands don't leave a place such as this

Increase Home Cheer

Simple, Well-Placed Decorations Will do It

By BELLE LOUGHERY

THE remarkable popularity of chintz and painted furniture is seen everywhere. The best decorators of to-day are using this style of decoration which used to be popular back in Colonial days, but which has been lost sight of in this country for many years. But chintzes have been used right along in England and France. So a few years ago some of our American decorators awoke to the fact that here was something they would "introduce" to us. But, as a matter of fact, they were only renewing our acquaintance. From all indications, American homes are giving this revived style a hearty welcome, and it is perfectly natural that they should.

The latest chintz and cretonne designs are simply delightful, and they have this equally delightful and unusual advantage for a popular decorating style—they are cheap. One can now obtain chintzes copied after some of the best old English designs for 15 cents a yard. These cheaper ones used to look their price, and prove it, after the sun or water had put them to the test. But even the cheapest ones are now sun-proof, and have rich coloring. Those that have brilliant birds and flowers on a black background are especially effective, and have the further advantage—although not so necessary on the farm—of not showing smoke.

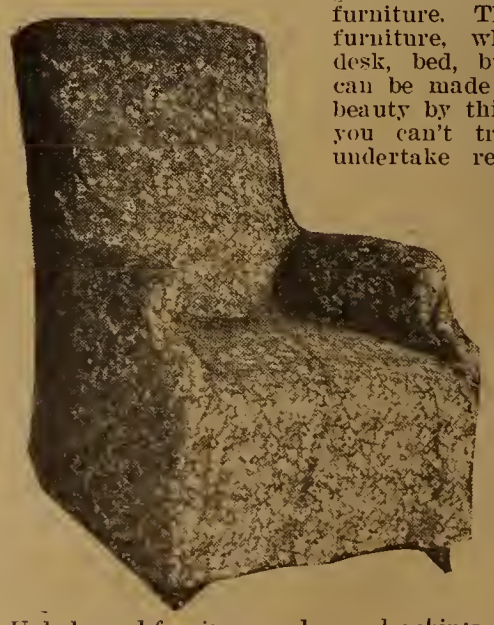
Paint beautifies woodwork and furniture

Along with the return to the use of chintz there has come a revival of painted furniture, and the two really seem to go together. It seems too bad that this style is not seen in more of our houses. It will eventually be found in the majority of them. But let me urge you readers right now to consider these two factors—chintz and paint—very carefully, and see the possibilities they offer for making your house infinitely more homelike and attractive.

Plain Walls Now Popular

One of the chief advantages of the use of chintz from a decorator's standpoint is the fact that it almost necessitates the use of plain wall. One would not use bright-figured chintz with a bright or figured wall paper. So when using chintz we will let our walls remain plain and subdued by covering them with a plain wall paper or, better still, by painting them with a good wall paint, which will produce a soft, velvety effect and, happily, make them washable. The wall is supposed to act as a background for our furniture, pictures, rugs, and hangings, and we find our rooms much more livable and attractive when we keep them in the background. Plain walls do not "hit you in the face," so to speak, by vivid coloring or elaborate design.

Another advantage of chintz or cretonne—it solves the problem of upholstering old furniture. Very likely you have an old sofa covered with black horsehair, a plush upholstered chair, or a settee on which the cloth has become threadbare. You cannot use them in their present shabbiness, you dislike to leave them useless in the attic, and yet you realize that upholstering is costly.



Upholstered furniture made new by chintz

Well, you can make them as good as new, and more attractive than before, by making them slip covers of the same chintz you are using for your window hangings and portières. In many of the country's "show places" you will find the furniture covered with these slip covers, not only in summer, but all the year around. By using them you can convert some of your odd pieces of old furniture into a new set. Three pieces of furniture are enough to give a room a unified appearance, and will not make it look as if furnished with odd pieces. I am assuming, of course, that you are also using the same material at your windows.

Right here let me urge any of you who may have heavy lace curtains at your windows to take them down. They are not seen in houses of good taste any more, and they certainly have no place in our attractive living-rooms. The very thinnest plain white fabric should be used, with a narrow flounce of chintz across the top and a narrow piece hanging at either side. Sunshine plays a big part in American homes, both city and farm. Odd pieces of left-over chintz can be used effectively by making them up into pillow covers, covering wire lamp shades, or by cutting out certain patterns and using them as appliqué on plain pillows, lamp shades, desk sets, or table covers.

Makes Furniture Bright and Fresh

So much for the chintz. Now about painted furniture. This vogue also offers splendid possibilities for utilizing old furniture and making odd pieces form one set. Let me first make sure that you understand the term "painted furniture" in its modern usage. I don't mean furniture painted bright red or yellow and perfectly plain. But I mean furniture painted white, gray, or some odd shade, or even black. Then, on these backgrounds are painted stiff little conventional flower designs or stripes, or else a design is cut out of the chintz and, after being pasted on the wood, is given a coat of shellac or clear varnish. Such painted furniture is the kind that is the height of fashion just now, and at the same time it is the height of good sense in the use of old furniture. The cheapest pine furniture, whether it be a desk, bed, bureau, or table, can be made into a thing of beauty by this treatment. If you can't trust yourself to undertake redecorating your furniture, any of the good paint houses will be glad to instruct you just how to set about the work. After you have done one piece you will be eager to use your spare time in completing a set.

You can more easily see the great possibilities of chintz and painted furniture by looking at the catalogues showing chintz patterns and also painted furniture. Many of them have reproductions in actual colors and will help you visualize how they would look in your own home.

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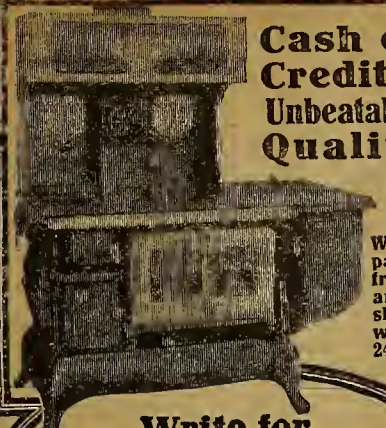

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Kalamazoo, Mich.

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A toilet preparation of merit. Helps to eradicate dandruff. For Restoring Color and Beauty to Gray or Faded Hair. 50c. and $1.00 at Druggists.

Big Entertainer 163 Parlor Tricks and Games, 310 Jokes and Riddles, 73 Toasts, 15 Card Tricks, 4 Comic Recitations, 3 Monologues, Checkers, Chess; Dominoes, Fox and Geese, 9 Men Morris. All 10 CENTS POST PAID.
J. C. DORN, 709 SO. DEARBORN ST., DEPT. 72, CHICAGO, ILL.

New Feather Beds Only $5.40
6-pound Feather Pillows $1.00 per pair. Satisfaction guaranteed. Write for Free catalog and our wonderful Free Offer. Agents wanted.
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WANTED!

it every rural community—persons to represent FARM AND FIRESIDE. Thousands of subscriptions are expiring right along—*you* can earn a liberal cash commission on each *new* or *renewal* subscription you secure.

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You can turn your spare time into money this winter. *One of our agents earned $217.00 during November.*

Write for Our Liberal Agents' Terms—TO-DAY

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SPRINGFIELD, OHIO

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Help to meet the huge demand for knitted goods created by the war.

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MAKE $21.00 NEXT SATURDAY
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Brand new proposition. The Wendell Compressed Air Washing Machine. Excels work of high-priced machines. Weighs but 2 lbs. Customers Excited. Profit 200 per cent.

AMAZING INVENTION
WORKS LIKE MAGIC

Cleans tub of clothes in 3 minutes. **Squirts hot water and suds back and forth** through the clothes driving the dirt right out. A child can use it. Mr. F. Hughes, of San Francisco, made $21 first 8 hours.
T. F. Speakman, our agent at Gainesville, Ala., put 36 machines out on trial. All were kept and paid for. **Profit $30 in 2 days.**
L. M. Palmer, Glen Allen, Ala., put 108 machines out on trial. Sold 107. **Profit nearly $100 in 6 days.** Act quick. Territory going fast. Business supplies the capital. Write today. We want 200 more Agents, General Agents, Managers. **WENDELL VACUUM WASHER CO., 961 Oak Street, Leipsic, Ohio**

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Dresses, Wrappers, and Children's Clothes

No. 2927—Baby's Layette. One size only. Price, twenty-five cents

Backs of dress, nightgown, coat, wrapper, petticoat, and slip

No. 2974—Smock for Girl or Boy. 2 to 6 years. Material required for 6 years, two and one-half yards of twenty-seven-inch material, or two yards of thirty-six-inch material. Pattern, ten cents.

A good pattern for the bloomers shown with this little smock is given below, No. 2975.

No. 2974

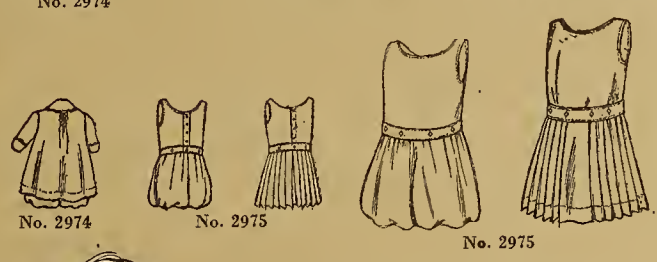
No. 2914
No. 2915

No. 2914—Waist with Smocked Overblouse. 34 to 46 bust. Material for 36-inch bust, one and one-eighth yards forty-inch; underblouse, two yards lace. Pattern, ten cents.

No. 2915—Four-Piece Skirt: Smocked Yoke Effect. 24 to 30 waist. Material for 24 waist, five yards forty-inch. Pattern, ten cents.

No. 2784

No. 2784—Three-Piece Skirt with Pockets. 24 to 34 waist. Width, two and one-half yards. Pattern, ten cents.



No. 2974 No. 2975 No. 2914 No. 2915 No. 2784

No. 2975

No. 2975—Child's Bloomers and Kilted Skirt. 2 to 12 years. Pattern, ten cents.

No. 2890—Wrapper Pattern Adaptable for Every-day Dress. 34 to 44 bust. Material for either dress or wrapper in 36-inch bust, four and three-fourths yards of thirty-six-inch, with one and one-fourth yards contrasting. This convenient and adaptable design is especially prepared for the woman who wants to simplify her sewing as much as possible. Pattern, ten cents.

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Easy Wash Days

Dora Finds Kitchen Helps Make Life Happier

By AVIS GORDON VESTAL

Filling tubs from kitchen-faucet hose is easier than carrying the water

MONDAY'S and Tuesday's labors, washing and ironing, week in and week out, used to keep Dora Delaven always tired out. Lifting many tubs of water for the cleansing of the clothes, and standing for hours to smooth them the next day, made her wish that our climate and customs favored the costuming of the South Sea Islanders.

Now Dora and her John have "put their heads together" to see what can be done to relieve her, and they made some helpers themselves and found they could buy many devices that are real life-savers. John made the wash bench of pine boards and stained it with oil and yellow ocher to make it non-absorbent of water, and to match the color of the yellow pine woodwork of the kitchen. Its special feature of efficiency is that it is 24 inches high, while many benches are made too low.

Problem the second was to save Dora's weary back. She had carried all the wash water across the room from the sink and back again to empty it. John bought a rubber hose and fastened a gasket at the end to slip over the sink faucet. He put hooks along the south wall to support the long hose. Now the tubs can be filled easily.

Helper the third was a "dolly" washing machine to replace the washboard. Whenever he is not too rushed with his own work he takes an hour off to run the machine for his wife. The two advantages of such a machine are that a man or boy or a hired woman can operate it and save the housekeeper that much; and in the machine one can use scalding water, while washing by hand requires cooler water. The ideal of the Delaven family is to buy a small gasoline engine and establish a laundry in one end of the woodshed. The motor will make possible the use of a special washer designed to be operated entirely by the engine. It will even have its wringer turned by the gasoline power.

Simple Tools Prove Useful

Several little tools that Dora values are a pronged wooden clothes stick for lifting clothes from the boiler or washer. The prongs enable her to wrap the steaming garments around the stick for draining. Another, also costing a dime, is a wooden clothesline reel. She grew tired of untangling the rope every week. A third is a wooden towel rack which she uses indoors for drying Baby John's flannels in winter.

Ironing day has been revolutionized at Dora's by the purchase of a few efficient tools which will last her through many years of use. Her ironing board was invented by an Ohio woman. It is attached at one end to a special strip which is hinged permanently to the back of her kitchen table. The supporting strip could have been fastened to the wall had she preferred. A wooden brace extends diagonally from the strip to the floor. As one end of the board is free it does not have to be lifted every time a dress is slipped on. Another good feature is that the free end is rounded, which is handy when ironing waists or pressing coats. The very special feature is an apron, or shield, of unbleached muslin which rolls around two rods slipped through swinging holders. This apron keeps clothes from touching the floor and becoming soiled.

What is your pet aversion in housework—the thing you shirk? Dora's is changing her ironing-board cover. She first sewed it on with a darning needle and wrapping twine in long stitches across the back. Then she tried tacking it on with many carpet tacks. Either method took much time, and she neglected to do it. Now she has a set of ironing-board cover clips which can be adjusted in a moment.

She has sworn off using old sheets for covers, because they so soon tear and wrinkle. Instead she bought a strip of new muslin, which is stronger.

Good ironing of starched clothes presupposes proper sprinkling. Dora's things were often too wet or too dry or spotted. The sprinkling had to be done the night before in order that the large drops of water flirted by hand should spread evenly. Now she has a tool that cost but the price of a sack of peanuts, and with this bottle sprinkler she can dampen clothes an hour before ironing. The aluminum spray has many fine holes. She fills a medicine bottle with water as hot as she can bear her hand in, sticks the hollow cork of the sprinkler in, and shakes the bottle. She finds it best to hold the bottle in her palm with its neck between her forefinger and middle finger. The finely divided spray of hot water spreads very quickly.

How Dora Irons Sleeves

Until recently Dora did not know what she was missing because she had no sleeveboard. Few sleeves are so cut now that they can be doubled flat. While one half is being smoothed the lower side wrinkles. It is difficult, too, to push the point of the iron into the gathers when the sleeve is lying upon the large board. With a narrow padded board to slip inside the sleeve it can be ironed quite smooth all over. This tiny board is supported by heavy wire posts upon a second slightly larger board. After using, a screw is turned and the two parts fold down together. Sleeves should be ironed before the waist is done.

A good flat iron is essential to smooth work, and indispensable to one who would save her time and strength. The old irons with solid iron handles, even with a thick holder, hurt the hands with their warmth, and they are often so old as to be rough. The newer stove-heated irons, with removable handle to fit the entire set of irons, are a degree better because more comfortable to hold. A third kind, with an asbestos-lined metal hood attached to the removable handle and covering the top and sides of the iron, is the best of all the stove-heated irons because it keeps the heat in the iron from radiating out at the top and sides. Thus all of the heat is thrown down upon the cloth being ironed, and the irons do not need changing quite so often.

Even with a set of asbestos irons a fire must be kept in the stove to heat them. An oil stove kept burning for a morning of ironing in summer heats the kitchen and the ironer, while a wood or coal stove makes still greater discomfort. Moreover, Dora had to walk back and forth to the stove many weary times exchanging cool irons for hot ones. A third objection to the stove-heated iron is that it is not always at an efficient heat, and this means time wasted, for one cannot iron as rapidly with a cooled iron as with one constantly hot.

An iron maintaining a constant heat from within is ideal. It cannot get too cool. If it gets too hot it can be easily regulated. No time is wasted using a cool iron or waiting for a hot one to cool down to a point where it will not scorch. No time and strength are wasted in making exchanges.

The city woman can use an iron heated by electricity or gas. The country woman can get one heated by alcohol or gasoline supplied from a little tank above or behind the iron. Dora considers her gasoline iron a good friend.

With this iron Dora can do really better ironing in less time. There is yet another advantage in the self-heated iron. As Dora does not have to walk across the room often to exchange irons, she can sit down to much of her task and save the weariness that comes from hours of standing. She has her board 31 inches above the floor, which is the best height when she stands to iron dresses or linen tablecloths.

NOTE: Many devices of use in the kitchen are suggested by Mrs. Vestal. We shall be glad to send you addresses of manufacturers if you do not find the articles where you trade.—Editor.

Quickly Made Trimming

By Ruth L. Fraser

SOME day when you have no trimming in the house for the blouse or child's dress you are making, try this little suggestion. Baste a narrow facing on the right side of your work, and on it draw scallops the size you want around a spool. Then stitch carefully around the scallops on the machine. Now cut out the scallops, not too close to the stitching, turn right side out, press in shape with your fingers, and you have your scalloped edge. To hold the facing in place you can stitch close to the edge of the scallops, you can brier-stitch around them, or you can embroider a dot in each scallop. A tailored waist needs no other trimming than scalloped collar and cuffs, scalloped tucks, or a scalloped box plait.

How to Set the Table

By Edith Salisbury

THE general attractiveness of the well-set table depends on the care displayed in arranging the various articles upon it.

If a cloth is to be used, the table should first be covered with a silence cloth to protect the wood, also to prevent any rattle of dishes. The silence cloth may be of double-faced Canton flannel or asbestos cloth. The latter is preferable, as it is a better protection against hot dishes. Over the silence cloth, which should be just the size of the table top, lay the damask cloth. It should fall down at least ten inches on each side, and its fold should be exactly through the center.

There are certain rules which apply to table-setting which in general always should be followed. For instance, knives should always be laid at the right side of the plate, sharp edge toward the plate, handles about one inch from the edge of the table. Spoons are laid on the right side also, bowls up and handles even with the knife handle. Forks belong on the left side, tines up, handles one inch from the edge of the table.

The table napkin, folded square, is laid on the left of the plate, open corner to the inside. The water glass is placed on the right side, above the knife.

Do not serve canned fruit from the jar in which it was preserved, nor cereal from pasteboard packages; nor permit any other slipshod habits to develop in your housekeeping. If you allow carelessness to creep into your methods—such carelessness as failing to remove food and crumbs and soiled dishes left from the last meal—or if you serve food in mussy dishes and permit upon your table soiled linen, stained silver, and glasses showing finger marks, you will utterly spoil the appearance of your meals, however pretty your china may be, and however good your cooking.

Housewife's Club

CHEESE Scallop—A few scraps of good pastry dough, a piece of cheese too dry to serve on the table, and a handful of crackers, seasoning and one-fourth cupful of cream. The pie crust is used to line individual ramekins of earthenware. The cheese is grated, giving half a cupful. One cupful of finely rolled crackers, seasoned with melted butter, salt, and a dash of cayenne, the whole well moistened with cream. Alternate layers of crackers and cheese are used, with the last layer of the crackers, and fifteen minutes in a rather quick oven is sufficient to cook it to a creamy, crumbly state, lightly browned on top.

To mix the butter, cream, etc., with the crackers is much better than to fill in the dry crackers and seasoning separately and pour the cream over last, as the first method gives a uniform moisture. B. M.

Cabbage au Gratin—Cut a small cabbage into quarters, boil with a little piece of pork till tender, drain the cabbage, and let it get cold. Then cut it up with a knife, not too fine, season with pepper and salt, a tablespoonful of butter, one quarter of a cupful of milk and two well-beaten eggs. Mix all well together, put into a baking-dish, cover with buttered crumbs, cover, and bake for three quarters of an hour, then uncover, and brown. A. W. O., Ohio.

Stuffed Potato Rolls—Two or more cupfuls of cold mashed potato. One or more hard-boiled eggs. Place potato in oven to soften, then turn out on a plate and mash flat with a potato masher. Mince the egg finely and season rather highly with butter, salt, pepper and, if liked, a little mustard. A touch of onion for those who like this flavor may also be added. Add a small amount of flour and cream to the mashed potato, just enough to make it workable. Shape with the hands into oblong rolls about three inches long and an inch and a half thick. Open the side, making quite a hole, and fill in the minced egg. Press the potato together, roll in beaten egg and fine bread crumbs, and fry in hot lard, rolling frequently to brown evenly and keep the shape.

Serve on a hot platter, garnished with parsley and hard-boiled eggs. R. L. F.

Cream Cake—A cream cake that is a triumph of economy is made thus: One cupful of sugar, one-third cupful of shortening, one cupful of milk, three cupfuls of flour, and three teaspoonfuls of baking powder. Beat this batter well before adding the baking powder, flavor with vanilla or almond, and bake in layers.

Cream for Filling—Beat one egg with one-half cupful of sugar, add one-fourth cupful of flour, and beat well, adding a very little cold milk. Stir this into a cupful of boiling milk, stirring until it thickens. Flavor with vanilla, let it get quite cold, and spread between the layers of cake.

Chocolate Filling may be made by the above recipe by simply adding a tablespoonful of cocoa to the boiling milk before it is thickened. Another good chocolate filling is made by boiling two squares of chocolate, one cupful of sugar, one-half a cupful of milk, and a tablespoonful of flour until it is thick, and flavoring with vanilla.

Mocha Filling—Boil a cupful of cream, two-thirds cupful of sugar, and a teaspoonful of butter until it will thread from the spoon. Take from the fire and beat, flavoring with very strong coffee or coffee extract. C. M., Iowa.

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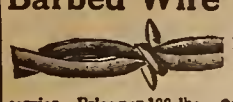

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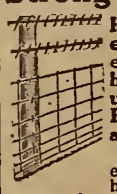

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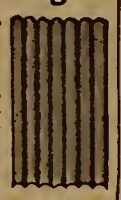

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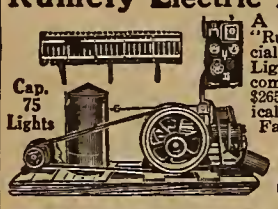

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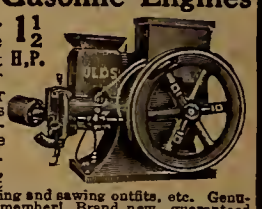

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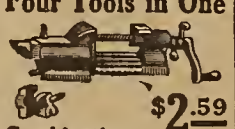

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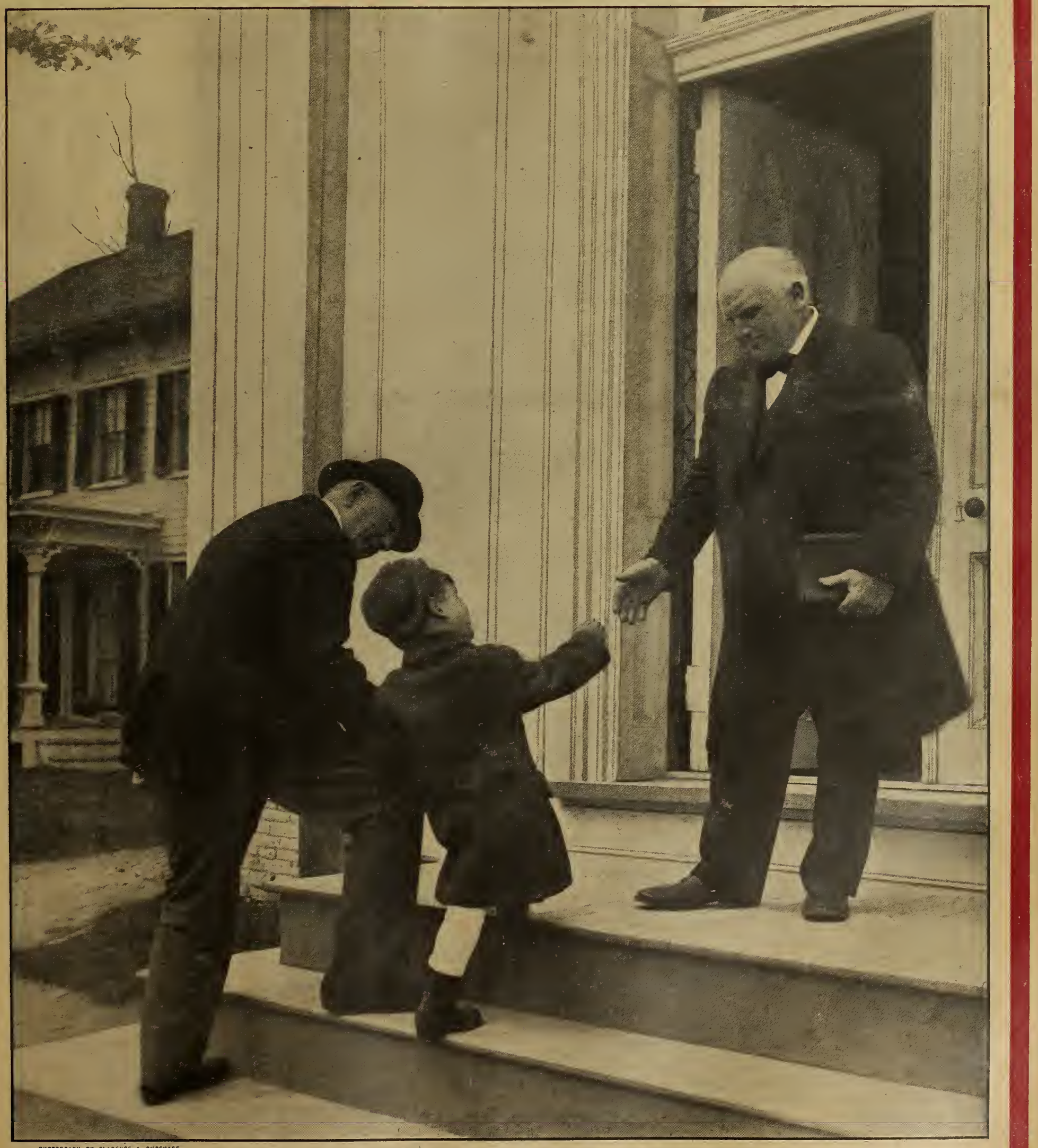

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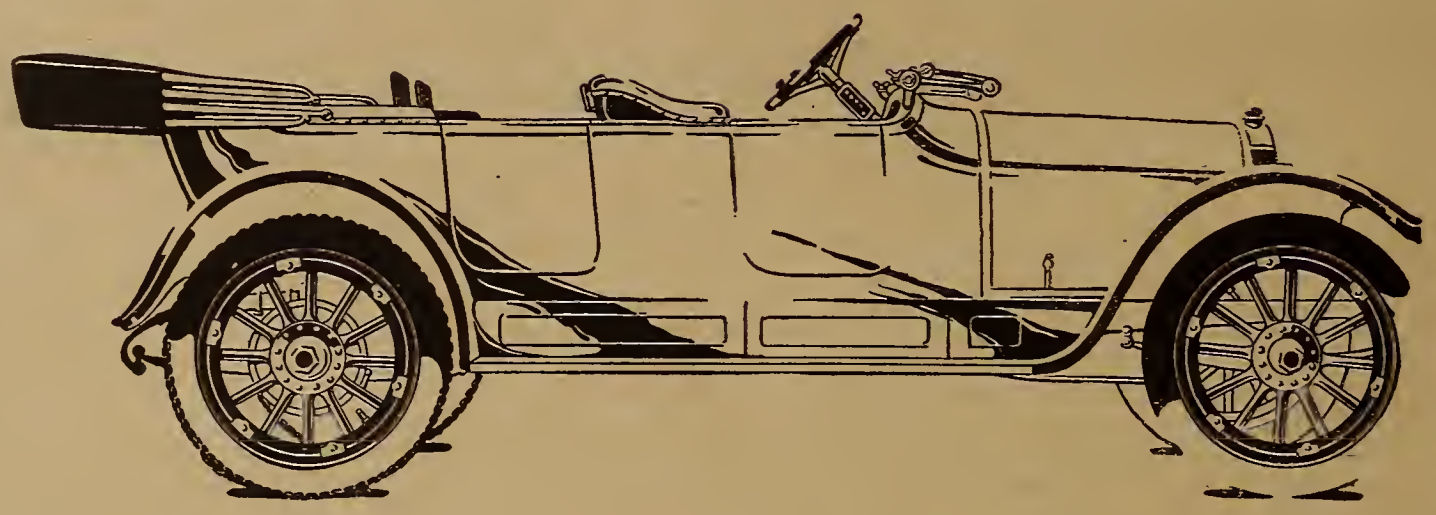

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Vol. XXXIX. No. 8 SATURDAY, JANUARY 15, 1916 *Published Bi-Weekly*

Returns From Fat Cattle

The Big Profit in the Beef Industry is in Rearing Feeders

By JOHN COWNIE

WHEN actively engaged as a working farmer for more than an average lifetime I am frank to confess that my chief object was to make money, and, being by nature robust and having a strong constitution, it was not necessary for me to engage in farm work for the benefit of my health alone. All legitimate business is conducted for the sole purpose of making a profit, and farming is no exception to this rule.

Having limited capital, without the necessary buildings or pasture for live stock, I raised and sold wheat, oats, barley, and corn, but when all the expenses were paid the profit was small. This system robbed the soil of its fertility, and reduced the yields of grain from year to year.

Realizing that such conditions could have but one ending—a ruined farm, hard labor, small yield of grain without profit, and a scant living—grass for pasture and hay, with corn for fattening steers, appealed to me as the only solution of the problem to make profit and at the same time restore the fertility of the soil.

Young steers, both stockers and feeders, could be purchased at that time with a margin of $2 a hundredweight between the buying and the selling price, when well fattened for the market.

In other words, a steer weighing 1,000 pounds could be bought for three cents a pound, and when fattened and weighing 1,500 pounds would sell for five cents a pound, there being a gain of two cents a pound on the original weight of 1,000 pounds, making a profit of $20.

But in those early days in the West, farmers as a rule were poor, and few were equipped for fattening cattle, and were compelled to sell their young stock, either as stockers or feeders. These stockers and feeders could be bought in the late winter or early spring, and if given a start on corn and hay before going on pasture good and cheap gains in weight could be made if there was grass enough for two steers and only one steer to eat it.

But now all this is changed. Farmers are no longer selling their young cattle, many are engaged in fattening them on the farm where they are reared, and the Western ranch does not now furnish feeders as in the past, with the result that feeders are few and high-priced. The demand for feeders is far greater than the supply.

And during recent years there has been more money lost than profit made in buying high-priced feeders and finishing them for the market.

I was present at the organization of the Corn Belt Meat Producers' Association in Iowa a few years ago, the object being to devise some means to make the business of feeding cattle yield a profit rather than a loss. A large audience, composed principally of cattle feeders, heard the cattle-feeding business discussed from A to Z.

Feeders Tell of Losses

EVERY speaker told of losses in the business, and finally one of the speakers, in an impassioned address, declared that if there was a feeder present who would say that he had made money by buying feeders and fattening them in late years he was a liar. The audience cheered the speaker's declaration.. No one qualified as a liar. Everyone engaged in buying feeders at current prices, and finishing them for beef, was doing it at a loss instead of a profit.

High prices were paid last fall for feeders, and with high-priced corn large amounts of money will be lost by cattle feeders.

One cattle feeder in Iowa told me recently that he would lose $25 a head on the 300 head of cattle purchased last fall for the feed lot.

Demand Keeps up Stocker Prices

THE demand for steers for fattening has been so great during recent years that both stockers and feeders have brought prices near the prices paid for fat, finished steers. Thus, instead of a profit, there has been in the great majority of cases a heavy loss.

But the question naturally arises, why do those persons engaged in this work continue to pay such high prices for cattle for the feed yard?

In reply to this I may refer to my own experience, which is that of many others in like circumstances. Having fitted up yards and sheds with hayracks, feed troughs and water supply, and being of a hopeful disposition, I always was looking forward to an advance in prices. The inducement to try again was too strong to be resisted, and I bought feeders at high prices in comparison with the prices paid for fat cattle. But after experiencing severe losses, as other feeders had done, I determined to change my method.

I purchased 60 head of high-grade two-year-old heifers of one of the leading beef breeds, and two of the best pure-bred bulls of the same breed I was able to buy.

When the calves were born the following year they were allowed to nurse their mothers, and when weaned were well fed. The process of fattening began at their birth, and there was no let-up until they were shipped to the Chicago stock yards when two-year-olds. About half of the lot were heifers, and the commission merchant to whom the shipment was consigned suggested that the steers and heifers should be separated, as the steers would bring the best price.

To this I objected, and the heifers and steers were sold together. The purchaser said the heifers were the best of the lot.

In thus referring to my own experience in feeding cattle for profit, I would urge the readers of FARM AND FIRESIDE who are in the feeding business to try this method and do their own shipping. Two or more neighbors can combine and ship their stock, but it must be borne in mind that it is only the heifers from the leading beef breeds that command the same price as steers, and it will be found a losing business venture if mixed lots, with inferior animals, are shipped together.

The profit in the beef industry is in raising the feeders, and I know there is profit in the business with well-bred cattle of individual merit of any of the leading beef breeds.

But this method of producing beef requires both capital and time, especially to get a start, and with conditions as they are in the corn belt, with which I am most familiar, it will be many years before this system becomes general.

EW

When a stockman breeds and rears the cattle he feeds, it is possible to carry on the fattening process from the time the cattle are born until they are finished two-year-olds

The Hired Man's Wages

What a Farm Laborer Does for $21.05 a Month and Board

By D. S. BURCH

A CONVERSATION I had with a young man on the train the other day seemed a fair sample of the farm-labor situation. The young man had no family connections outside of some cousins and distant relatives, neither did he seem to have many friends. He was trying to find a good place to work.

For the last two years he had worked on a Wisconsin dairy farm, but had voluntarily quit. A distaste for milking and too long winters were the reasons he gave. His wages, he said, had been $25 a month with board, but from casual remarks, I inferred that he had had no social standing in the family circle,—or outside either,—and so had pulled out on general principles.

He confided that he had no definite place in mind, and his ticket read only to St. Louis. If by that time he had not heard of a good place to work he was going to Oklahoma on local trains, stopping off at different towns until he found a locality that appealed to him. I mentioned a thriving little city in southwest Missouri and told him what the prevailing farm wages were near there. Whereupon he wrote down the name of the place and said it would be his first stop.

Rather a hit-and-miss way of finding a job, isn't it? But even though you have friends the situation is sometimes no better.

The farm worker who is without influential friends and has but little money is under a distinct disadvantage. The manager of a large Illinois farm, who employs several hundred different hands in the course of a year, took pride that a large percentage of those who left came back and applied for work again. But the manager's employer, a wealthy man, looked at it differently. The hands were secured through Chicago employment agencies and the owner's directions were, "Work 'em so hard they won't come back."

The very nature of farm work prevents organization that is worthy of the name. The hired man has little time of his own, and cannot take the time without danger of losing his job. One young man I know well didn't miss a milking for two years on the dairy farm where he worked. That is 1,460 consecutive milkings.

The Government has collected some interesting figures on farm wages by the month and by the day, also the hours of work per day in different States. These figures will give some idea of what is being paid in different parts of the country:

Average for the United States During 1914	
When board is furnished—	
Monthly wages for farm labor	$21.05
Day wages for farm labor	1.13
Day wages for harvest hands	1.55
When board is not furnished—	
Monthly wages for farm labor	$29.88
Day wages for farm labor	1.45
Day wages for harvest hands	1.91

The wages paid harvest hands look rather low to those who remember that wages used to be $2.50 and $3 a day, and even more to good shockers and stackers. But we are most likely to remember only the high prices.

Besides, the wages of harvest hands have been getting closer and closer to that of general farm labor. This is due to better harvesting machinery, and probably to better railroad service in supplying harvest hands to sections that need them. The last few years have shown there can be such a thing as too many harvest hands. In some towns in Kansas last summer the drifting unemployed became such a nuisance they had to be driven out of town by the sheriff.

City Hours Longer Than They Look

BUT in general, the condition of farm labor may be said to be on the up-grade. Since 1900 the wages of employees in city trades have increased about 22 per cent, whereas farm labor has gone up about 37 per cent, or over half as much again. The difference is even greater when you consider the higher cost of living in the cities, and I know of several good mechanics who have voluntarily given up their jobs to work on farms. There is not so much difference in the hours of labor as you might think when you consider that most working men have to get to their work at six or seven o'clock, and this time is not a part of the regular working schedule. A man in a large city who is supposed to work eight hours a day, and actually does work that time in the shop, really puts in about ten hours a day when you count his coming and going.

Average hours of labor on farms by seasons are, according to the Government:

Spring	9	hours	45	minutes
Summer	10	"	54	"
Fall	9	"	52	"
Winter	8	"	33	"

Farm workers in Maryland have the reputation for working the longest of all in summer—11 hours 45 minutes. The shortest working day for farm laborers is for the winter season in Utah, only 7 hours 55 minutes. The longest average hours for the year around are worked in Wisconsin, Minnesota, North and South Dakota. The shortest are in Utah, Nevada, Arizona, and Wyoming. Just why this is so has not been explained, though it is possibly due to cattle-raising which flourishes in those states, and is not a confining industry.

The dairy industry in Wisconsin and Minnesota must be largely responsible for long hours there.

Good Hands Wait for the Boss

BARE figures of wages in different States of course do not tell the full story of working conditions, and anyone who has worked on a farm knows that high wages do not always go with large saving. Nevertheless, here are the government figures which show where farm wages are highest and lowest:

States Where Highest Farm Wages Prevail (1914)	*Per Month, With Board*
Nevada	$39.00
Montana	36.10
Utah	36.00
Idaho	35.70
California	35.80

Wages without board are about $15 a month more.

States Where Lowest Farm Wages Prevail	*Per Month, With Board*
South Carolina	$12.00
Mississippi	12.70
Georgia	12.80
Alabama	13.00
Louisiana	14.30

Wages without board are about $6 a month more.

Observe that where wages are low the cost of board is also low, indicating that wages go up and down with the cost of living.

The figures show current wages and are only averages. Some workers receive more and green hands less. A man going to another State where methods are different would have to be satisfied with the wages of a green hand for a time. This is especially true when a man who has been used to handling one horse is called upon to handle a four-mule team. A farm hand who asserted he was experienced, and was hired as such, was about to start for town with a load of hay but found he had forgotten his coat. There was no place to tie the team, which was in the road ready to start, so he pulled the neck yoke forward, letting the tongue down on the ground between the horses. His employer asked him what he was trying to do, whereupon he explained he thought the tongue would dig in the ground and stop the team if they tried to start.

One good farmer who employs lots of help says: "This is how I can tell my good men. When I go out into a field to see how a man is getting along, a good hand always stops his team or his work aud waits for me to come up. But the other sort—and I don't keep him long—always puts on a show of working hard when he sees me coming."

The plan of giving a hired man a premium for raising all the hogs in a litter or for cream checks that exceed a certain amonnt a month undoubtedly makes him more careful and thoughtful of stock. It also is bound to encourage him to look out for his employer's interest in various ways. The straight wage does not often encourage the average worker to do more than simply the work assigned to him. Besides that there is a heap of difference between working and just putting in your time.

Efficiency in farm labor is just beginning to be taken seriously. I remember a summer some years ago ou a farm where six of us were employed. During the month of August the principal work was fall plowing, and each man was provided with a team and a 14-inch walking plow.

It so happeued that at the same time a camp meeting was going on about two miles away, and in the evening all the men went, usually getting home after midnight. This gave them less than five hours' sleep, and the natural consequence was to make it up resting during the day. Some resting of the teams was necessary because of the hot weather, and probably the religious services did good, but I could never see just where the employer got value received. How would the following scheme have worked?

Instead of sending six sleepy men out to plow, set two of them at some other steady work not requiring teams, and let the four remaining men go out to plow with six teams. The teams would be used in relays so that each team could rest one third of the time. Of course the men would be expected to take an occasional rest themselves, but there wouldn't be any hour-long debates on theological subjects. The four men would plow as much as the six, and the employer would gain the work of the other two men.

The social standing of the farm worker is a great big subject that we can't hope to settle here, but it looks as though that is improving. For this the women should be thanked. Hiring hands who board themselves seems to be becoming the popular custom. This gives the farm workers, especially the married ones, more of a natural home life, and the single ones can look forward to a little family table of their own.

Hired hands don't leave comfortable farms like this. The city doesn't attract them. And why should it when farm wages have been increased 37 per cent since 1900, whereas city wages have been increased only 22 per cent?

Grow Winter Lettuce

By CECIL BROWN

WITH a few hundred dollars invested in a small hot house and equipment, and with a limited market, Stephen Hyde, living near Carthage, Missouri, began ten years ago the raising of lettuce for winter markets. He did a small business the first year, but he prospered. Every year he has added more sections to his hothouse and improved his equipment.

Now the Hyde hothouses include three acres under glass. Every square foot of ground in the beds produces lettuce to the retail value of from 30 to 40 cents. Nearly all of the towns within a radius of 150 miles of Carthage are supplied with lettuce during the winter months from the Hyde farm. And the sales amount to many thousands of dollars a year. Mr. Hyde is the only farmer in Missouri who plows glass-covered fields.

Carthage, a town of 12,000 persons, furnished a market for much of the Hyde product the first few years of the enterprise. Later a great deal of the lettuce was marketed in Joplin, a city of 20,000 persons, 20 miles away.

Owing to the great production, Mr. Hyde can sell lettuce nearly as cheap in the winter as lettuce sells for during the summer. Commission men handle the product direct from the farm.

The lettuce-raising season of the Hyde plant begins iu August and continues until May. During the winter months a temperature of from 60 to 75 degrees is maintained in the great hothouse in the daytime, and an average of about 50 degrees at night. A thermostat — temperature regulating device—situated in the center of the hothouse is connected with Mr. Hyde's sleeping-room, and a bell awakens him if the temperature falls below or goes above a certain point.

Operations are begun in the Hyde plant about the middle of August, when seed is sown broadcast, and covered with a rake. The small plants are transplanted in three weeks to other beds, being placed two inches apart. Three weeks later they are transplanted again, about six inches apart. The plants then are left until they mature, which is about five weeks in late fall and early spring, and eight weeks in winter.

The most monotonous feature of the business is transplanting the plants, but Mr. Hyde has developed a force of expert lettuce growers. They can transplant in a day 10,000 plants in the two-inch beds, and from 6,000 to 8,000 on final transplanting.

An Electric Sample

ELECTRICITY need not be a luxury. It is true that power-house electric rates for lighting are a little more than the cost of burning kerosene lamps, also that a farm electric-lighting plant involves some investment, but electric current carefully used is an economical comfort. One reader of Farm and Fireside lives where electric current cannot be had, but he has a portable electric house lantern which cost less than a dollar, and can be recharged with a new battery for less than 20 cents.

"At first," he says, "I hesitated to lay it down for fear it would spill oil or go out. Such is the force of habit from using oil lanterns. And even now it is hard to realize I can fill oil lamps and stoves at night with perfect safety if I use my electric lantern."

Of course even a large flash lamp is not worthy of comparison with a regular electric current of high voltage, but it at least gives a favorable sample of electricity on the farm.

EW

Teaching a Dog to Work

Rover, Properly Trained, Will Make a Willing Chore Boy

By JENNIE ROBERTS

WE HAVE trained a couple of shepherd dogs to stop all fights among our poultry. A bright, active, young dog makes a comical policemau, but a very efficient one when rightly trained, and the training is a great pleasure when undertaken in the right way.

Scotch shepherds train their dogs to care for their sheep as a matter of course, and many of us read with a great deal of pleasure of the skill and devotion of these dogs, but many American farmers have yet to learn that the same traits which make any kind of sheep dog so useful to the old-country shepherd also make him useful in caring for all kinds of stock, from cattle and horses to old hens with chickens.

Our first chicken policeman was originally very badly trained on horses and cattle, and so badly abused that he persistently ran away from home and came to us. Noticing his natural brightuess, we bought him for an old debt of two dollars which his former owner owed us. Then his real training began—first on a flock of a thousand range sheep, and then on cattle, horses, and hogs all at once.

Given kind treatment, encouragement, aud consistent training, his most enthusiastic pleasure soon came to be the work which his former owner had tried in vaiu to force upon him. Many a time when he is eating and a call comes for help with any of the stock, he will seize the biggest bone from his dish and run to his work, maybe carrying that bone for fully half an hour before he has had time to eat it. And I have seen him bark at the stock through his closed teeth with his jaws set tightly upon a precious bone.

This is the full secret of successful work with such a dog—joy in the work and confidence in his master. If you have not patience, do uot love the dog, or have not control of the tones of your voice, do uot try to use a dog with poultry or other stock. A dog intelligent enough to do the work is just as sensitive as a little child to sharp tones of the voice, and good work is not done unless he does it not merely williugly but joyfully, and offers his work of his own accord.

This offering to help of his own accord was the first inkling I had of the value of a dog with poultry. Anyone who has tried to round up and house a good-sized flock of chickens that have been roosting outside knows what a difficult task it is.

One cold fall night I felt that the chickens must be got in, though there was no one at hand to help me. I was struggling manfully to coax and drive about a hundred of them into the hen house, and was almost ready to give up in despair when Gyp came offering to help me. I motioned him away, but he misunderstood my motion as an order to go around the building, and a few moments later he came proudly around the farther corner of the hen house, driving slowly ahead of him a bunch of chickens as he would drive a bunch of lambs.

Dogs Better than Men with Chickens

IT TOOK him just about two jiffies to convince me that the same tactics and words of command that will put a bunch of timid sheep or lambs through a gateway will put a bunch of timid chickens through a doorway. And it was not many days before I came to the conclusion that one good dog is worth at least four men in rounding up chickens. The dog has just as much patience aud, being more active, is quicker to head off those that bolt from the flock. Also the chickens seem to mind him better.

The main difficulty I found was in teaching him not to hurt the fowls. He would get excited and overzealous, but with patience on my part and occasional punishments, consisting of sharp scoldings and, in cases of severe disobedience, of slapping the side of his nose with my bare fingers, he soon learned to whine or bark instead of hurting the fowls.

Severe punishments do more harm than good. Nine times out of ten disobedience is due to the excitement of the game, for if the dog loves his work it is all a game to him. Scold him in a sharp voice if his excitement carries him too far in anything, but immediately drop the sharp tone and give the next commaud in a natural and happy voice. He will jump joyfully to do your bidding at once. If you retain the sharp scolding tone for the command, he thiuks you are still scolding him, and will usually remain in a crouching, dejected position, or try to run home. You must treat him in such a manner that he wants to stay with you and wants to work.

It is a common idea that a dog good for one kind of stock is worthless for other kinds, but this has not been our experience. The same words always mean the same thing to the dog, and he will obey them. It makes no difference what kind of stock it happens to be, or what words are used, so long as the same word is always used for a given thing under all circumstances. For instance, the Scotchman says, "Owre th' dyke," and his dog jumps the wall or hedge. We hold the fence wires apart aud say, "Come through," and he jumps over the woven wire below the barbed ones. Both dogs have thus passed the barrier. Likewise, the command to "Go way round" means exactly the same thing always, whether the thing to be gone around is horses, cattle, or sheep. Each owner may make his own code of commands and motions, but these are the oues we use—they are self-explanatory:

"Sit down," "Stay there," "Whoa," "Take them out of here, "Bring them along," "Go round the building," "Come here," "Hurry up," "Gently," and the two mentioned above, "Go way round" and "Come through." Added to this are motions with the arm to the right or to the left to indicate in which direction the dog is to go. Also a motion directly toward the dog with the forearm, palm of the hand flat open. We use this to stop him when he is so far away that the voice does not carry easily, or to emphasize a "Whoa" when he is overzealous. Also this: Extend the arm high above the head and take a few quick steps in the direction the dog is to go when he is a quarter or half mile away on the open prairie and can see but not hear you.

Given kind treatment, proper encouragement, and consistent training, a dog soon learns to help his master with the live stock. Even when eating he will grab a bone and run to his work if called

And when the dog has finished a good piece of work, a successful master never neglects telling him he is a good dog. He soon learns that this means approval and an honorable dismissal for the time being.

This may seem to be a good many things for a dog to keep separate, but unless the trainer lacks patience, mixes his commands, or uses different words for the same command the dog will learn them all. For example, never say "Stop" one time and "Whoa" at another. They mean the same in English, but the dog does not know that, and it confuses him. Use one or the other, not both.

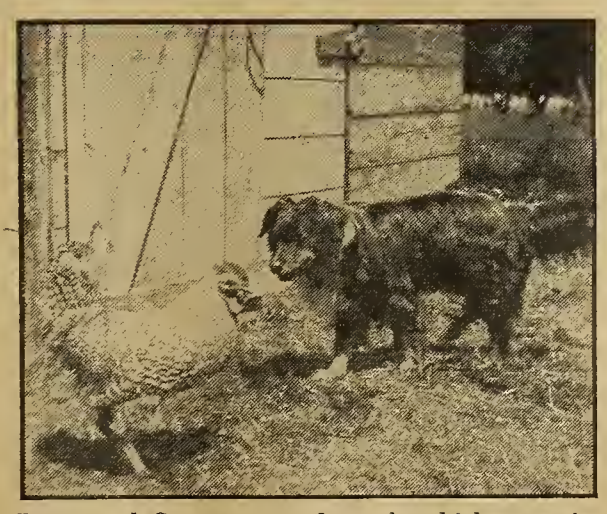
I believe the hardest one of all the above commands to teach so it stays taught is "Gently." After exerting his full ruuning ability in heading off a bunch of horses, a dog finds it hard to take a happy medium between that and a dead stop "Whoa" if he is sent after a bunch of milch cows and is told to "Bring them along—gently." When he is rounding up chickens it is hard for him to "Go way round—gently." His temptation is to take a mouthful of feathers out of the first one that bolts.

But "Gently" can be taught so fully that he will go up to a little lamb and push it along with his nose or shoulder, and I frequently use a dog to help drive an old hen with little chickens. He is as careful to keep them all bunched as if they were much larger stock.

I have found it easy to teach a dog to stop fights among chickens and other stock. A half-trained puppy is quick to note any unusual disturbance, and his curiosity leads him to investigate. Just encourage his curiosity and tell him to "Play policeman." He will soon learn that he is to run between the combatants.

Last winter we had thirty cockerels running together in the cattle yards. Our two dogs were with the stock all the time, and so persistent were they in stopping fights that for several months I saw only oue bird with a bloody head.

In closing let me repeat that unless there is love and coufidence, aud above all, confidence, between master and dog these thiugs cannot be done. If the dog comes crouching and fawning to his master's side there is no hope. If, however, the master's treatment is such that the dog comes to him happily and quickly, then he may expect success.



Rover and Gyp can round up the chickens easier than their mistress can. They don't hurt the chickens

To Get Early Broilers

By B. F. W. THORPE

FOR facts above suspicion tie to the man who is on the job and delivering the goods. A large number of poultrymen who have got well beyond the experimental stage in the poultry business were asked to give their views and experience on brooding chicks from the shell until feathered.

Charles L. Klobe, Pennsylvania chicken expert, says: "I strongly favor the brooder-stove system, which enables one to care for a large bunch of chicks in a short time. You know just where they are when night overtakes them. Practically it takes uo more time and labor to care for 500 chicks than for 100, and the fuel is uo greater in the one case than the other.

"The chicks can have the correct degree of heat, and as a result thrive better and faster and make more vigorous development.

"For the average farm the whole season's brood can be handled in one flock. Where this is possible, on many farms several hundred chicks will be raised in place of a fourth or third of that number, when it is possible to do away with the unending fussing with broody hens or the old-time styles of brooders.

"I get good results with rooms 8x8 feet for 150 to 200 chicks, 9x11 feet for 200 to 300 chicks, 12x20 feet for 500 chicks, and larger rooms in proportion for larger flocks. Of course it is not necessary to use buildings of the exact dimensions given, but it is essential that the size of flocks named have approximately the number of square feet of floor space stated."

A long-time successful Ohio poultrymau, Joseph A. Blum, believes that the average farm poultry keeper will be ahead in the poultry game if he buys his chicks already hatched, or hires them hatched by a professional at some wholesale hatching plant. Then it is best to use a good coal-heated brooder that can be set up in a suitable room where the entire season's chick supply can be cared for as a single job.

Stove Brooders for Big Chick Farms

A NEW ENGLAND poultry specialist who is in close touch with the best poultry markets in the country, Mr. R. J. Godin, considers it a privilege to help set right the conflicting reports on stove brooders that have been afloat throughout the couutry of late.

"After years of dissatisfaction with the best make of small oil-heated brooders," says he, "I have made successful continued use of large coal-heated stove brooders and can recommend this system to anyone wanting to raise 200 or more chicks at one time.

"A beginuer should not be beguiled into buying a cheap, inferior brooder-stove outfit. Oue cannot get too good an equipment for the chicks.

"A brooder stove really does not spell success in itself. A well-adapted building or room must be provided that is tight, dry, aud warm, with a chance for abundant ventilation without drafts.

"We use a building 14x9 feet, with walls three feet high aud the center of gable niue feet from the floor. The front of the house has a door, and two windows 28x28 inches, and the rear gable has a window at the top, 36x18 inches, and a muslin-covered opening at bottom, with shutters outside 38x18 inches.

"We regulate the temperature of the house so as to be about 10 degrees lower four or five feet away from the outside of the hover.

"One of the causes of failure in using the large colony brooder stoves is that too large a uumber of chicks are put under one hover when the weather is cold.

"Another cause of poor success is too great heat under the hover. The chicks should not pant even if the temperature has to be lowered to 90 degrees. We start with temperature at 90 to 95 degrees, and lower gradually each week so that at the age of five or six weeks the chicks are weaned from the hover.

"One reasou why the colony stove brooder has been condemned by some poultrymen here in the East is because the flocks were infected with bacillary white diarrhea. Of course stock infected with this disease will die off like flies, under any condition of brooding."

JOHN DEERE
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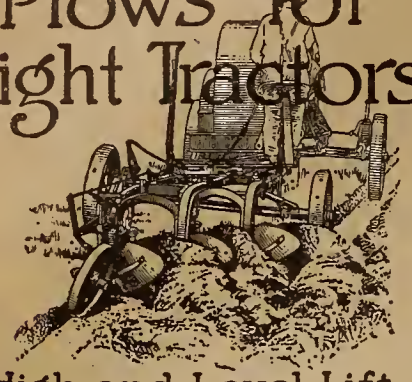

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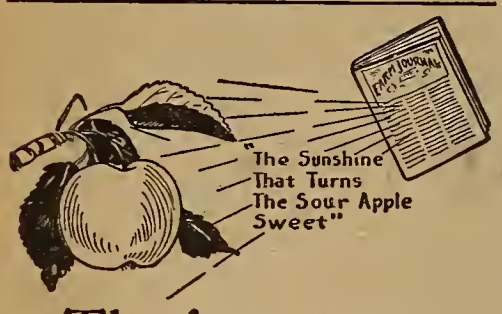

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The Editor's Letter

A Reply to a Farm Boy Who Has no Farm

I HAVE a letter from a young man in Clayton County, Iowa, who is in a predicament which is astonishing to people uuacquainted with Midwestern farm couditions, but which is not at all surprising to those who know those conditious.

His letter was not iutended for publication, and I therefore do not give his name. The body of his letter runs as follows:

"I have becn a reader of your paper for six years and think it is one of thc very best farm papers published, and I have always had confidence in what was in it, so I have decided to ask you somethiug of the greatest importance to me.

"My father has a very good farm of 178 acres which he is iutending to sell for $200 au acre, and has a buyer uow. I think I could buy it for $175 an acre, but the rate of interest is so high here that I cannot do it. As I have heard so much of the surplus capital in the Eastern States, and that they must lend their money out at 1½ to 2½ per cent, I thought I would write to you, as I have confidence in you. Does the Government leud mouey to farmers at those rates, or not?

"I am twenty-one years of age and married. I have a good wife, who hates worse than myself to think of going to town. And as my father has four daughters, he caunot give me the farm which I love so dearly."

Is Money Needed in Corn Belt?

Whenever the subject of rural credits is mentioned, people are apt to say that the coru-belt States generally are not in ueed of any different credit system from what they have. Probably no rural-credit system would give this young man all the money he wants. The trouble is that the price of land has become so high that a first payment is a very difficult thing for a young man to save. I think it will pay the young farmers of the country who are trying to get a start and live in regions of high land values to study carefully opportunities to be found in regions of cheap land. And the first questiou to ask is, "Why are these lands cheap?" If they are cheap by reason of discovered infertility, let them alone; but if they are looked down upon because of failure to discover actual productiveness, they will often give the young man frozen out of his native neighborhood by risiug land values his opportunity.

My youug Iowa frieud is mistaken, of course, as to the cheap money to be had in the East. There is plenty of money, but it is seeking other investment than land mortgages, and more profitable ones.

The following is the body of my auswer to this friend in Iowa:

"At $200 an acre your father's farm is worth $35,600. Why cannot you arrange with your family to rent this laud on a basis which will pay your father enough for the needs of the rest of the family? It has always made a liviug, I suppose, for all of you, and I see no reason why it should not continue to do so. You think that your father would be willing to take $175 an acre from you. This means that he is willing to take $4,450 less from you than from any other buyer. Instead of your buyiug the farm at $175 an acre, would he not be willing to rent it to you, and let you have the stock, machinery, and equipmeut in place of the $4,450 he would be giving you in reduced price?

"Most people are willing to reut land at four per cent or less of its selling value. Could you not, with the equipment on the farm, make a rent of $8 an acre and pay it to your father, and thus keep control of the land during his lifetime? I believe that by making a careful study of the farm and its problems and working everything to the best advantage you can pay a rent of $8 an acre on a good Iowa farm, and perhaps make something besides. In fact, I know of men who are renting lands on a share or partnership basis who get as high as $12 and $15 an acre out of it.

Cash Rent Better Than Share Rent

"If you are a good farmer you can better afford to pay cash than a share reut. Perhaps this suggestion will not be agreeable to your father, and it may be that you will see some objection to it yourself; but if it were my farm and you were my son, I should think carefully over the matter before selling the farm under the circumstances. I think I should try, if I were you, to work out some rental arrangement by which you could use the farm, pay rent sufficient for the support of your father and sisters, and perhaps accumulate euough money in time to buy the shares of the others. You would only have to save a few thousand dollars uutil you could perhaps make a sale of live stock and other stuff and raise enough so that you could make a loan for the balance.

"I do not believe there is any ehauce of getting cheap money very soon. I see by the papers that the Russian Government is now seeking a loan of from $50,000,000 to $100,000,000 in this country, and is willing to pay as high as nine per ceut interest. Mauy of the greatest governments of the world are in the money market trying to borrow at high rates of interest. There is no earthly way of preventing iuterest rates from going up under such conditions. Meu with mouey to lend will naturally send it to the place where it will bring the highest interest on safe loaus, and none of the governmeuts have yet reached the point where loans to them are considered unsafe by great capitalists.

"Another reason for keeping control of the farm for a year or two is this: The probabilities are that either the United States Goverument or the State of Iowa, or perhaps both, will pass rural-credit laws, in the near future, under which mouey can be borrowed on farms at the best possible rate of interest. If you can keep the farm in the family, pay rent on it, and thus make it support the entire family, and by superior judgment, industry, and economy save a few thousand dollars, it is quite probable that you will be able to place yourself in a position to borrow the money on some sort of living basis.

"I hate to think of a young man like you, with a wife who hates to go to town, being obliged to leave a farm which you both love. This sort of thing, if it is carried on all over the country, will sooner or later bring the nation to ruin. The place for farmers is not in town, but on a farm. There are too many of them, especially women, who are eager to leave the farm and go to town.

"Your case is a peculiarly sad one if you are forced to give up the life you prefer. When young men who wish to stay on the farm are obliged to leave it, and take with them to a new life wives who are equally reluctant to make the chauge, the situation is a very bad one. You are not to blame; your father is not to blame. Influences which you cannot control, such as the high price of land and high interest rates, are too strong for you; but I hope that you and your father will make a strong effort to resist these influences, aud to keep up in all its integrity that best possession of an American family—a farm on which the family lives."

The Editor

Grasping for Grapes

DID you lose your grape crop last year? Don't do it this year. Lay your plans now to avoid another such loss.

Was it owing to foliage disease of some sort? Most foliage diseases of grapes can be cured by a spray of Bordeaux mixture. We've told how to make it, and shall tell again; but just for now we'll refer you to the dealers in garden and orchard supplies. They sell it.

Perhaps the grapes blossomed nicely, and after the green berries were well formed, small, clear-cut brown spots formed on them and enlarged, and appeared on the foliage as well, and finally the green grapes died, turned black, and hung on the barren stems.

You can save them this year by putting the clusters in paper bags just after the blossoming is over. Pin the bags about the stem closely, so that the spores of the black rot will uot get in. Leave the bags on until the grapes are ripe. You can get the bags at the grocery or drug store, where they are used for putting up goods.

Clean all the old litter away from about the grapevines, and burn it. Those blackened and blasted grapes which disappointed you so much finally fell off, and they were chock-full of disease spores for this year.

Bagging the grape clusters is a good thing for the farm with a few vines, even if there were no black rot; but spraying with Bordeaux mixture is the sovereign remedy for this disease, as well as for grape-foliage diseases. Spray just as the buds are swelling, and repeat several times during the season.

If leaf-eating insects commence to make trouble, add arsenate of lead paste to the Bordeaux spray—one pound of the paste to 20 gallons of water.

NO "FRILLS"

Just a Statement About Food.

Sometimes a good, healthy commercial traveler suffers from poorly selected food and is lucky if he learns that Grape-Nuts food will put him right.

A Ciucinnati traveler writes: "About a year ago my stomach got in a bad way. I had a headache most of the time and suffered misery. For several months I ran down until I lost about 70 pounds in weight and finally had to give up a good position and go home. Any food that I might use seemed to nauseate me.

"My wife, hardly knowing what to do, one day brought home a package of Grape-Nuts food and coaxed me to try it. I told her it was no use but finally to humor her I tried a little and they just struck my taste. It was the first food that I had eaten in nearly a year that did not cause any sufferiug.

"Well, to make a long story short, I began to improve and stuck to Grape-Nuts. I weut up from 135 pounds in December to 194 pounds the following October.

"My braiu is clear, blood all right and appetite too much for any man's pocketbook. In fact, I am thoroughly made over and owe it all to Grape-Nuts. I talk so much about what Grape-Nuts will do that some of the men on the road have nicknamed me 'Grape-Nuts,' but I stand to-day a healthy, rosy-cheeked man—a pretty good example of what the right kind of food will do.

"You can publish this if you want to. It is a true statement without any frills."

Name given by Postum Co., Battle Creek, Mich.

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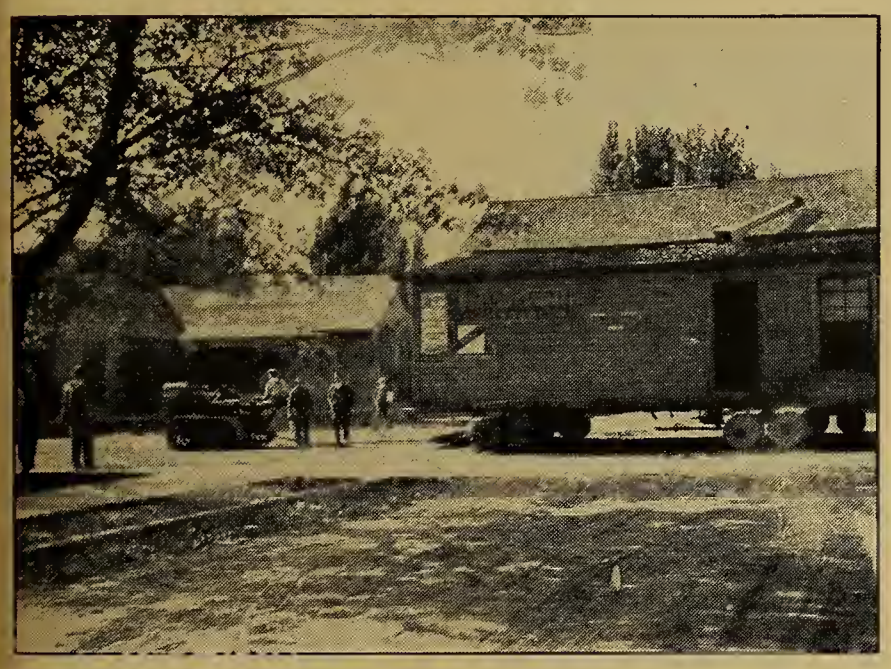
Jacksonville, Fla.

With the Camera Man

Black walnut trees are in great demand at from $30 to $50 a thousand feet, because gunstocks are made from them. Large, clean, prime logs, 12 to 14 feet long and from 24 inches and up in diameter, sell for $75 to $100 a thousand feet. The better grade walnut logs are very scarce. One Iowa sawmill company pays out annually to its customers more than $100,000 for black walnut logs. This company produces more than a million gunstocks every year. Most of this walnut comes from pastures and open woods. The gunstocks are cut from short lengths. This makes it possible to use trees without a long, free-from-defects length. Before the present European war began, many big shipments of black walnut logs were made regularly to cities in Holland and Germany

PHOTOGRAPH BY UNDERWOOD & UNDERWOOD

Mounted on a horse, Arthur Davis, a motion-picture actor, rode off a precipice 83 feet high into a chasm in the Adirondacks. The wild leap terminated in a pool of water, which was dotted by sharp, ugly crags of rock. Catapulted from the great height both horse and rider struck the water at the same time. In the perpendicular descent rider and horse turned two somersaults. One of the five camera men assigned to take pictures of the unusual and daring scene fainted as rider and horse fell. Davis was fished out of the pool, the bottom of which he and the horse had touched, and was rushed in a special Pullman car to a New York City hospital. It was found he had received a broken leg and many bruises. He will recover. The horse was uninjured and swam ashore



Here is a farm tractor that is pulling a house. The house weighs more than five tons. The building was moved ten blocks, a part of which was up a five per cent grade. The altitude of this Idaho town is 4,500 feet. This tractor will pull three 14-inch plows. It is one of several medium-priced tractors that will plow eight acres in a ten-hour day at a small expense

PHOTOGRAPH BY UNDERWOOD & UNDERWOOD

How the latest landslide choked the Panama Canal is shown in this photograph, which was taken near Gold Hill. The photograph pictures vividly the problem confronting the canal officials. Rock and earth have moved down from the heights on each side, and the pressure exerted on the sides and bottom of the canal has forced the mud at the bottom up out of the water. In the foreground is an island which began to form just before the picture was made. The mass of earth in the background, through which a narrow channel has just been blasted, came up first as an island, and grew until it blocked the channel at this point

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price

One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising

Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.

Advertising rates and regulations furnished upon request.

January 15, 1916

The Horse That Pulls

"THAT off horse is pulling the whole load!"

How many times we have heard such a remark with reference to a horse which has enthusiastically dug his toes in and pulled his end of the evener away ahead of that of his mate!

The thoughtful horseman has often wondered whether the popular notion is correct. He has said to himself, especially when he has seen the slower horse sweating and in distress, "I'd like to know whether that off horse hasn't some selfish reason for pulling ahead. Hasn't he found out that it's easier for him when he's in the lead?"

The engineers of the Minnesota Agricultural College have proved by actual test that the faster horse is the gainer by the operation. If the load pulled is a ton, and the faster horse keeps his end of the evener eight inches ahead of the other end, the slower horse is pulling 1,012 pounds, while the fast one gets away with a load of only 988 pounds.

The fast horse has his head with him.

Unconsciously he has adopted that golden motto for every farm, "Drive your work, let it not drive you."

Almost any job goes easier that way.

Selecting County Agents

THE Farmers' Union of Nebraska has passed resolutions bearing in an interesting manner on the new and important farming factor of tbe county agent. They welcome the county demonstration agent sent by the Government, saying, "We need the assistance of his scientific knowledge." The resolutions go on to say that the county agent should be a man who has made good on a farm after finishing college by applying his scientific knowledge "before going out as a teacber of agriculture or farm adviser."

This latter qualification is desirable, but not too much stress may be laid on it. The sole qualification for a farm adviser is that he be a good farm adviser. There is more opportunity for a man to acquire knowledge of this business in passing from farm to farm and studying their problems in close association with farmers than in working out the problems of any one farm. Not many of the county agents are of the kid-glove order. Most of them grow much faster in skill in their peculiar business after they enter it than they could possibly do on a farm. The questions to ask are, "Is he a good county agent? Does he know enough to help us solve our peculiar problems? Is he a good general hired man for us?" If these questions can all be answered "Yes," it is not wise to quibble on his manner of getting the knowledge.

Another clause of the Nebraska resolutions will bear examination. "We further recommend," they read, "that the farmers of each county shall have the power to select the agent for tbeir county." This is an easy sort of resolve to speak for in a public gathering of men wbo believe as we all do in democracy, but will it hold water? On its face it calls for the election of county agents by popular vote of the farmers. This would be a good way if all the farmers could meet, take up one applicant after another, study his history, talk with him, find out what sort of man he is to get along with, and canvass the matter of his value pro and con as compared with other applicants. But we never vote on people in that way.

Great corporations who want skilled specialists never elect them by vote of their stockbolders. The stockholders cannot meet often enough and talk the matter over fully enough to enable them to do the work of selection. So they have their engineers, chemists, and skilled acconntants chosen either by a board of a few directors or a general manager.

We have been electing our county superintendents of schools in just the manner demanded by the Farmers' Union for generations, and the plan has been a failure. City superintendents have been chosen by school boards, and the plan has been a success. In many States, recently, the law has been changed so as to require the county superintendent to be hired by a school board from wherever a good man can be got. This plan is very much better than the old one.

There is danger in the Nebraska resolutions, honest and well meant as they are. The moment the county agent ceases to be appointed by somebody in whom is vested that rigbt, that moment the whole movement, so rich in promise of good things for farming, will meet shipwreck.

Good Cream Good Butter

THERE is a creamery in Marin County, California, which has recently been able to pay for butterfat from 4 to 6½ cents a pound above San Francisco prices. It is a co-operative creamery owned by forty-seven small dairymen, so the farmers get the benefit of the good prices.

It not only paid these fine prices, but it paid 10 per cent dividend on six months' operation.

It has done these things by grading its cream.

It does not pay the same price for sour, tainted cream that it pays for sweet, fresh cream. It gets not over a dozen cans of "Grade B" cream a week, all the rest being "Grade A," which is either sweet cream without foreign flavors or simply sour without foreign flavors.

The farmers found they could produce first-class cream, and as soon as cream-grading made it pay they did so.

It takes good cream to make good butter. It takes good butter to compete with oleomargarine and get the best butter prices. It takes both of these to get the best profits out of the butter business.

Makes Wonderful Butter Record

THE world's long-distance milk and butter record is claimed by the American Jersey Cattle Club for this Jersey cow, Sophie 19th, of Hood Farm, Massachusetts. In six consecutive lactation periods this remarkable cow produced 38 tons of milk, or the equivalent of over 5,000 pounds of butter.

At two years of age she started her record with over 7,000 pounds of milk to her credit, and in her seventh year gave over 17,000 pounds. This is about eight times the production of the average cow. The testing was supervised by the Massachusetts Agricultural College, and full particulars may be had from the Jersey Cattle Club, 352 West Twenty-third Street, New York City.

Dairy records extending over terms of years are more difficult and, of course, more expensive to secure than short-period resords, but their value is proportionately great. It is the steady producer that makes the dairy profitable.

It May Have Value

PROF. G. F. FREEMAN of the Arizona Agricultural College has done the arid regions a service in publishing a statement that the Hopi corn advertised as a cure for drought has little value. One of the best services the scientists can perform is to puncture the balloons of those unscrnpulous people who put forth advertising matter which sounds plausibly scientific but is really a mask for fraud.

Though not valnable to the farmer, the Hopi corn is interesting, and may possess great value to the plant breeder. It may be planted two or three feet deep and has the ability to make its way upward through the earth and bear ears. These are sometimes almost down to the surface of the ground. It is planted in hills eight or ten feet apart, and a good crop of it is eight or ten bushels to the acre, grown with eight or ten times the normal amount of work. It is, however, marvelously adapted to withstand drought. It wonld seem that a judicions crossing of it with ordinary corn might result in a good variety which, planted in deep-listed furrows, would be rooted deep enough to enjoy moisture in very dry seasons. No doubt some Southwestern plant breeder is at work on this very problem. These are the men who in modest ways confer the greatest boons on mankind.

The man who bred the first Hubbard squash, for instance. Does any reader know who he was, and how much the squash was improved by him?

Our Letter Box

Farm Life for Me

DEAR EDITOR: We hear and read a great deal about the isolation of farm women. I am one of them. At least, I married a farmer, I live on a farm, and do the work incident to that position. A stranger might say: "Dear me! how can anybody live in such a lonely place?" I am perfectly willing to admit that it is lonely sometimes, and that I work hard; yet there are compensations.

If I cannot attend the theater and moving-picture shows, dear to the heart of city dwellers, I can sit in front of a good fire and read what I like. If I cannot take a car at my door any hour, I can usually have a horse without handing over my hard-earned ducats for the privilege.

If I cannot take my card case and go out calling on thirty people in one afternoon, I can call on a few: and if I get an invitation to tea I can stay without making a hole in my manners nor think I am putting my hostess out, as family fare in a farmhouse is generally good enough for anybody.

If I cannot haunt bargain counters and buy a lot of trash I don't need, I can sit at home in peace of mind and body and hunt out what I want in a catalogue. Mail-order folks are most obliging—for a consideration—and I have found certain ones reliable. They all may be for anything I know to the contrary.

If anybody wants to be constantly amused, then the country is not the place for them. But I have yet to be convinced that to be amused all the time is the chief end and aim of life.

MRS. J. W. B., Nova Scotia.

Fruits in Danger

DEAR EDITOR: Florida and adjacent citrus-fruit growing States are making a life and death struggle for their trees and groves. Three years ago a nursery shipment from Japan to Texas contained infection of citrus canker, a disease for which as yet no cure has been found.

Infection is carried from tree to tree by birds, insects, and animals, and has been compared in its deadliness to the bubonic plague in human beings.

The Florida Legislature, at its last session, appropriated $125,000, individual citrus-fruit growers about half that amount, and the Federal Government $22,000 with which to make a systematic attempt to stamp out the disease. These funds have proved entirely insufficient, and the Southern States affected are asking the Federal Government to take a strong hand in the fight to save the citrus-fruit industry of the South from rapid destruction.

M. F. ROBINSON, Florida.

Proud of Her Son

DEAR EDITOR: Merl L. Johnson, our ten-year-old son, began trapping gophers about October 11th, and during the two weeks ending October 25th he had trapped 22 gophers. One night, with eight traps set, he caught seven gophers. In one week he caught six civet cats. His little sisters, Opal and Ruth, accompany him on his trips and help to carry traps, spade, and game. Where is there a boy who can beat this?

MRS. CLYDE A. JOHNSON, Iowa.

Another Self-Feeder

DEAR EDITOR: I wish to call attention to an error that was made by Mr. A. M. Honnould in his write-up of the results of Professor Evvard's feeding tests. Below one picture is the following: "The originator of the hog-cafeteria idea and inventor of the self-feeder is John M. Evvard of Iowa." I am not looking for honors, nor am I expecting much credit for the work I have done, but I demand justice. I invented a self-feeder in 1906 which has been in successful use ever since. I hold Professor Evvard in highest esteem, and praise him for the work he has done, so what I have here written is only for the purpose of correcting an error in the article.

H. W. LINEWEAVER, Iowa.

Bits of Good Humor

Defined

A smile: The lighting system of the face and the heating system of the heart. —Woman's Home Companion.

Then What?

The man struck a match to see if the gasoline tank on his automobile was empty.

It wasn't.

Deep Regret

"Does your wife show any interest in the war?"

"Yes, indeed. She talks about it."

"What does she say?"

"Why, she says that she wishes I could go."

His Real Want

STREET-CORNER ORATOR—I want land reform. I want housing reform. I want educational reform. I want—

BORED VOICE—Chloroform.

Rather Suspicious

A company had opened a new swimming bath, and as a compliment sent a free ticket to the mayor.

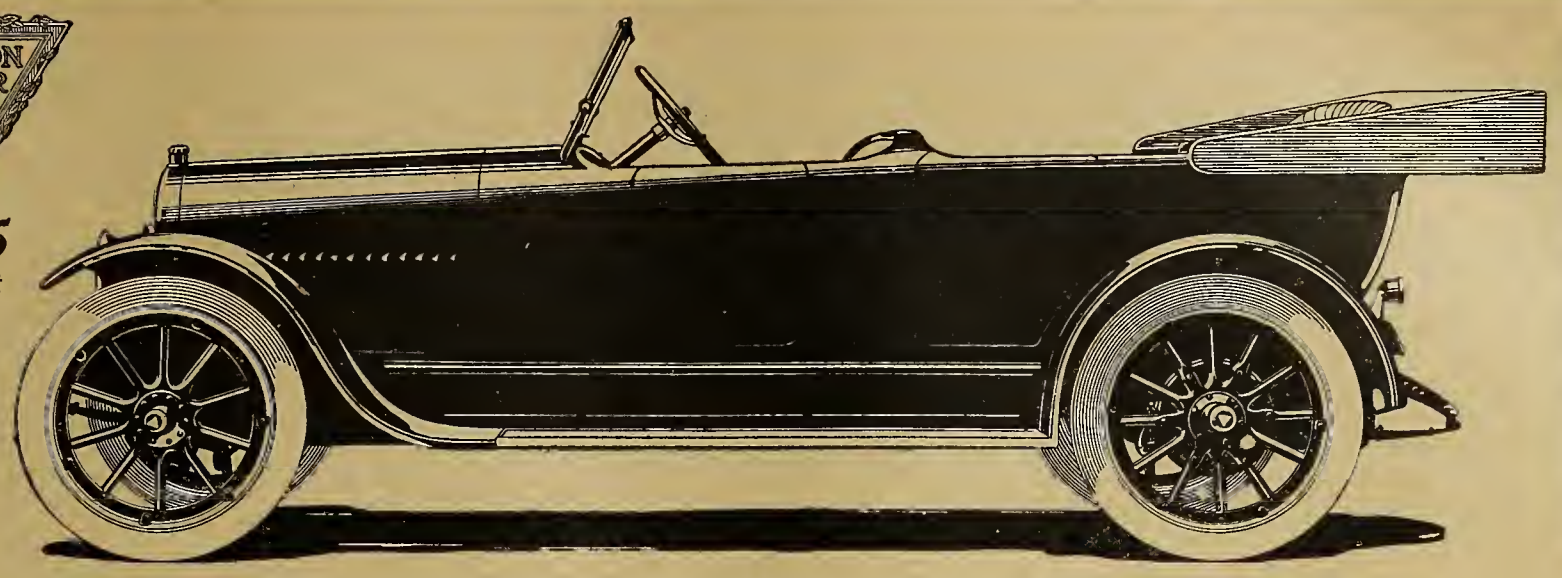
That worthy man was very pleased. But he began to wonder when another ticket arrived. Sitting down, he wrote to the bath proprietors as follows:

"Gentlemen: Your first ticket I received as a compliment. Your second strikes me as being rather suggestive. If you send me a third I shall take it as a personal insult."

EW

HUDSON SUPER SIX
TRADE NAME REG.

$1375
at Detroit



7-Passenger Phaeton—$1375 at Detroit

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Patented by Hudson
December 28, 1915
Patent No. 1165861

Hudson Super-Six

76 Horsepower—an Added 80% Without Any Added Size

These Stock Car Records Officially Broken

The Hudson Super-Six—7-passenger touring car model—at Sheepshead Bay Speedway in November, officially broke all stock car records up to 100 miles. Also all records for quick acceleration, under American Automobile Association supervision—as follows:

100 miles in 80 minutes, 21.4 seconds, averaging ***74.67 miles per hour,*** with driver and passenger.

The previous best record was made with driver only, with a larger motor and more cylinders.

75.69 miles in one hour with driver and passenger.

Standing start to 50 miles per hour in 16.2 seconds.

Mark what those records mean.

No other stock car in history has equalled that performance. No other like-size motor has ever developed such power.

The Super-Six has proved itself the greatest engine ever built. It has outrivaled Eights and Twelves. It has almost doubled the efficiency of Sixes.

And this motor is a Hudson patent, found in Hudsons only. So it means that Hudson cars hereafter hold the highest place in Motordom.

80 PER CENT MORE POWER

Let us compare it with the Hudson Six-40, long the leader among Sixes. That Six-40, by its matchless performance, in two years quadrupled Hudson sales.

The Super-Six is identical in size. No added cylinders, no extra complications. Lightness and economy remain.

But the Super-Six develops 76 horsepower. Best earlier type sixes of like size developed but 42 h. p.

And all that increase—that added 80 per cent—comes through wiping out vibration.

ADVANTAGES OF HIGH POWER

You ask why you need that 76 horsepower if you don't care for high speed.

You need it because it means vast reserve power, to mount hills without effort, to make hard roads easy, to avoid changing gears. Also it enables you to creep on high gear, and to pick up with record quickness.

And it all comes through lack of vibration. So it brings with it bird-like motion. The motor is so smooth that the car seems to move by magic.

OTHER TYPES DISCARDED

We stopped production on former Hudsons when the Super-Six proved this supremacy. Thus we lost over $6,000,000 in sales last fall. We also stopped our experiments on Eights and Twelves.

Then we doubled our factory to meet a doubled demand. And we bought materials for $42,000,000 worth of these new cars for this season.

All because the Super-Six is bound to dominate hereafter. Its performance is resistless. Any buyer of a high-grade car will choose it when he knows the facts. It will also win thousands from lower-grade cars to the Hudson.

A LUXURIOUS CAR

The Super-Six looks its supremacy. In every detail we attain luxury's limit, regardless of the cost. The new body lines are perfect. The finish is superb. In the upholstery we use a rare grade of grain leather. Each compartment of the Phaeton has a rounded, finished dash.

At no price is it possible to offer more of luxury and beauty. Yet our mammoth production brings the price to $1375. That for a car which must be conceded the greatest car built today. Go see it at the nearest Hudson Showroom.

7-Passenger Phaeton, $1375 at Detroit
Five Other Styles of Bodies
Ask for our Super-Six Catalog—just out.

HUDSON MOTOR CAR COMPANY
DETROIT, MICH.

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Think of it—not a cent to pay for any Majestic Engine you want for three whole months after you receive it! We want you to test it out on all kinds of work so that you can be absolutely sure that it is just the engine you want before you even think of buying it. If it isn't, return it at our expense. If it is, you may make the first payment in 3 months and the balance in 6, 9 and 12 months—giving you

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The Majestic is the "happy medium"—neither too heavy nor too light. Has fewer number of parts—a marvel of simplicity—has the most wonderful automatic mixer ever put on a gasoline engine. All are horizontal, 4-cycle type, open jacket, bopper cooled.

YOUR CREDIT IS GOOD

No bank deposit—no references—no mortgage—no embarrassing questions—no collectors—no red tape. You may pay all cash if you prefer but it costs you not one cent extra to take advantage of Hartman's most liberal credit terms.

FREE Engine Book Tells why the Majestic is the biggest engine value in America today and explains the famous Hartman selling plan. Mail coupon for Engine Catalog No. E254

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Mail Coupon NOW

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Without obligating me, send your Engine Catalog No. E-254 and particulars of selling plan.

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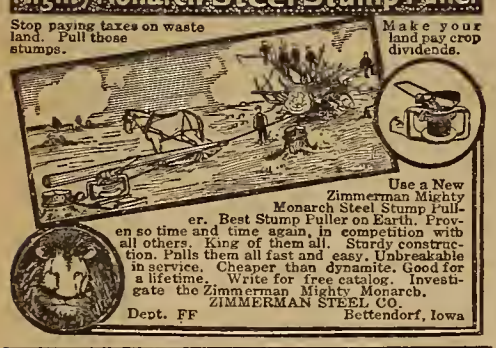
Pull 200 To 600 Stumps Per Day With Zimmerman Mighty Monarch Steel Stump Puller



Use a New Zimmerman Mighty Monarch Steel Stump Puller. Best Stump Puller on Earth. Proven so time and time again, in competition with all others. King of them all. Sturdy construction. Pulls them all fast and easy. Unbreakable in service. Cheaper than dynamite. Good for a lifetime. Write for free catalog. Investigate the Zimmerman Mighty Monarch.
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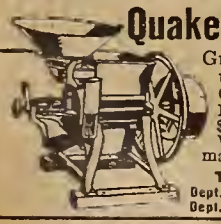

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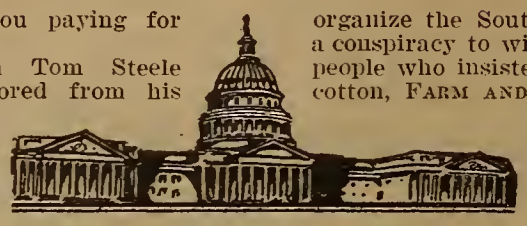
To-day's Market Prices

What Washington Hears About Farm Values

By JUDSON C. WELLIVER



WHAT are you paying for gasoline?

Congressman Tom Steele of Sioux City motored from his home to Washington. "I started at the Missouri River with my tank full of 11-cent gasoline," he said on arriving here. "They raised the price every time I filled it, and when I got to Washington I filled it at 22 cents."

What's the explanation?

Uncle Sam has a big inquiry afoot to learn. Good authority declares the price may go to 35 cents. The war has had something to do with it, preventing development of many new oil fields, in all parts of the world, just when the motor car and other uses were hoisting the consumption, and also intruding an extraordinary demand for use in what has been called "a petroleum war."

The Trade Commission, the Department of the Interior, the Department of Justice, and the Interstate Commerce Commission are all looking into petroleum products. It is declared that production is falling off in some important fields, but how far this causes the present-day prices cannot yet be told.

From gasoline to horses is a short step. Gasoline is up, horses down. Easily explained. Eight years ago a big automobile maker announced that in the succeeding year he would turn out 50,000 cars, and his competitors declared he was going to glut the market and wreck the business. They got together, compared notes, found that among them they were planning to make 150,000 cars in the succeeding season, and there was general sentiment that the country couldn't absorb them.

"Pshaw!" said the man whose 50,000 order had started the trouble, "ten years from now we'll make a million a year and the country'll take 'em."

He missed his guess—because he was too conservative. His audience pronounced him crazy, but his million-cars-a-year prophecy came true in eight years instead of ten!

Of course it has displaced a lot of horses. In the first year of the European war about $50,000,000 worth of horses were exported—practically all new business. Despite that, horses fell heavily in price and the demand, except for war, was nil.

What about the future?

Europe is the market just now that saves the horse business from prostration. When the war is over, Europe will have used up all its own horses in armies, and millions of ours. The best information is that Europe will have to keep on buying horses for a long time after the war, to replace those sacrificed. While they are buying hundreds of thousands here, they are destroying millions upon millions of their own horses. Our contribution is insignificant.

After the war Europe will require horses for peace uses. The tractor may to some extent push Dobbin out of agricultural use here; to a less extent in Europe, where farming is on small plots and very intensive. Europe will have to buy horses for peace after peace comes back, and this country will be the place for her to get the better ones.

Would Peace Bring Prosperity?

In some other directions there is less confidence about the effect of peace on certain farm products. The world managed, despite its preoccupation with war, to raise more wheat in 1915 than in any former year. Considering that about half the wheat is normally raised in Europe, this is impressive. As a whole, the world's farmers have risen marvelously to the war's emergency. Production has been boosted, and will be further increased from year to year if war prices continue. The great increases are largely in articles staple in America. After the war, then, with production at high tide and Europe getting back into its stride, there is danger of an era of sagging agricultural prices. I have heard several cotton authorities declare, however, that within the next five years the cotton growers, who a year ago thought they were ruined for all time to come, will have the greatest farming bonanza in the world.

This recalls that during the cotton panic last year, when almost everybody was urging the planters to quit cotton, and predicting unending ruin for whoever raised any more, FARM AND FIRESIDE insisted that cotton would "come back" strong, and soon. While the self-constituted advisers of the Southern farmer were begging folks to "buy a bale," and chambers of commerce were trying to organize the Southern bankers into a conspiracy to withhold credit from people who insisted on raising more cotton, FARM AND FIRESIDE'S Washington letter quoted cool-headed authorities who said cotton was all right. Have you observed who guessed right?

The Southern farmers didn't lose their heads. They reduced somewhat their cotton crop, and raised more of other things, which was good business. But they managed to turn out 11,161,000 bales of cotton, which on December 1st was worth an average of 11.3c a pound.

"What would you think," asked a government official whose department deals with commercial relations, "if a State should undertake to establish a monopoly of its whole agricultural and horticultural production; to collect all the products, sort, standardize, and brand them, sell them, and distribute the proceeds to the producers?"

"California?" I asked, after the shock had passed.

"Yes," he replied. "That's what they are getting ready to do. They have the necessary laws, and the nerve to try it. It's the biggest experiment in state socialism ever dreamed of in this country."

California Plans Big Things

Knowing something about the gigantic operations in co-operative marketing that the fruit and vegetable growers of California have "put across," I wanted to learn about this state monopoly plan, and the first question was:

"What would the administrators of the Sherman anti-trust law think? Could they arrest the State of California and lock it up as a conspiracy in restraint of trade?"

That, it developed, is just what the State of California is trying to learn.

California's immense production of fruits and vegetables has been a problem from the beginning. In the orange business, for example, about 62 per cent of the production had been brought together in the co-operative organization, but the other 38 per cent remained independent.

So the last legislature passed a bill creating a State Marketing Commission, and Harris Weinstock was made director. He has been in Washington recently, spying out prospects for the great project of complete state-wide co-operative organization.

"Everybody tells me that my plan is sound business; most of the lawyers say it is legally sound," he said. "I want to get the producers together by proving that it is good for them, and I want to keep the consumers from fighting it, by proving it also good for them. If we can get 100 per cent co-operative organization, with the State at the head of and actually directing the whole business,—gathering, warehousing, assorting, labeling, shipping, and selling the whole product of the State,—it will be a great object lesson to the country and the world. The producers have received the plan with enthusiasm.

"It isn't proposed to force anybody into the organization, but to make them all want in. Moreover, compulsion might weaken our case under the Sherman act. What I want now, chiefly, is assurance that if the project is attacked under the Sherman law I, as director of markets, can be made the sole defendant. It wouldn't be desirable to have all the farmers in California made defendants and maybe put into stripes. If they'll agree not to give us immunity, but to conduct any prosecution, with a view to testing the plan, against me alone, I'll be willing to take the chance of any California jury convicting me."

Mr. Weinstock illustrated the need of co-operation. California produces an immense amount of dried peaches. They cost to produce about 5 cents a pound. At present the producer gets about 2½ cents, and of course the business is on the rocks.

"Yet," said Mr. Weinstock, "I find in the Chicago and New York markets that the consumer pays up to 27 cents for the best dried peaches from us, and an average of 17 cents for all of them. There's something wrong in between. Proper and legitimate marketing costs of course there are, but they can be reduced so that the producer will make a fair profit instead of a loss, and yet the consumer will save something too."

This California idea has now been put up to the Attorney-General and the Federal Trade Commission in Washington. They have not officially passed on it but it is unofficially known that both regard it with keen interest.

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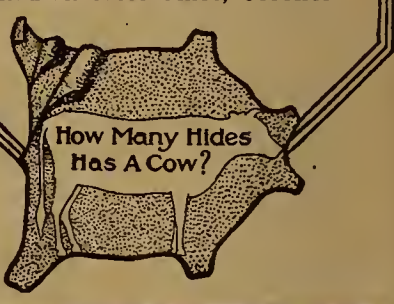

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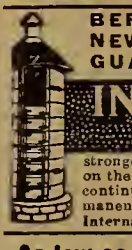

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strongest built, simplest to put up and easiest operated on the market. Adjustable automatic take-up hoop—continuous open-door front—air-tight door and permanent ladder are some of the unusual features. The International Silo Co., 126 Main St., Linesville, Pa.

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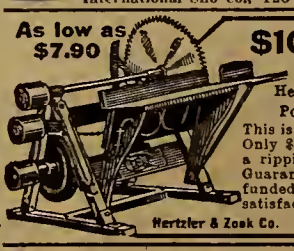

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HOOSIER STOVE CO.
126 State St., Marion, Ind.

Farm Notes

Materials That Last

By D. S. Burch

TAKING tile, brick, and concrete all together, we have three excellent building materials, and they work well in combination with each other. Concrete is a general favorite for foundations, piers, walks, platforms, and things built near the ground. It sets solid, and makes an excellent base for most anything.

Tile and brick are used largely for walls and work higher up. All three materials can be reinforced by rods or wires laid in the joints. And by the way, barbed wire and woven wire are both good as reinforcing material. In tile, special grooves are made to receive reinforcement. Thus, in making a tile silo you have your hoops just the same as for a wood silo, but they are right in the wall, firmly embedded so they can't slip up or down, and protected forever from rust. The reason you can conceal the hoops is because tile neither shrinks nor swells, and there would never be any occasion to touch the hoops.

I would hesitate to say that any building is fire-proof, but certainly neither concrete, brick, nor tile can burn or be greatly harmed, even though all the contents of a building burned up. Brick, for instance, is made by heating clay to 3,000° F., and can't burn any more. Tile and cement are also the direct products of furnace heat hot enough to melt the ordinary metals.

Wood is an excellent building material because it is so easy to handle. You can saw, chisel, and shape it any way you want and then fasten it together with nails, screws, or bolts. Every town has at least one lumber yard, and wood is easy to get. Cement, brick, and tile are harder to procure in some localities, and a little more difficult to work with, but when you are all through and you clean off your trowel, you feel just a little better satisfied, because what you have built is permanent, fire-proof, and will need neither painting nor repairs for years to come. You can safely cut down your insurance policies, because there is less to burn up, but the chances are you'll never have a fire.

Good Economy Tires

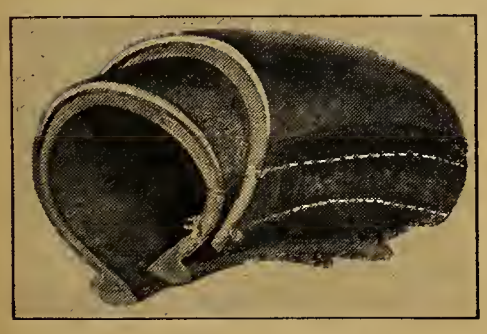
By W. V. Relma

A FAMILIAR remark is, "I'd buy a car if it didn't cost so much to run." But gradually the cost of operating cars has been reduced.

However, tires with their annoyiug troubles have been the cause of much unhappiness and expense. Lately the double-tread tire has been introduced to cut the cost of tire upkeep.

A double-tread tire is made from two old casings. It is produced by sewing an old casing, with a good tread or road surface, over another casing with a good fabric or body. The bead of the top casing is removed and the stitching is placed rather close to the trimmed edge.

This method frequently enables the autoist to obtain double service from his



tires. A set of tires that have run 4,000 or 5,000 miles can be sewed together, and the resulting tire will make another 5,000 miles and be puncture-proof as well. The extra thickness will very materially serve to discourage any nails or tacks that try to go through. The only serious drawbacks are increased weight and a rather rough appearance.

Tractors Plow There Now

THE last of the annual Wheatland (Illinois) plowing matches, which have been famous since 1877 under the direction of "Uncle Jimmy" Patterson, was concluded at the meeting in September last. While the horse-propelled plows were pulling off the scheduled plowing contest with a thousand spectators, hard by in another field a brace of tractors was doing a plowing demonstration with a crowd of onlookers ten times as large.

The nephew and successor of "Uncle Jimmy" Patterson, who plowed his last furrow and went to his reward last year, announced that next year and thereafter tractor demonstrations will take the place of the annual Wheatland horse-plowing event.

EW

Local Price Variations

WHEN one man is selling potatoes, oats, or other staple farm produce at the "going" price in his local market, another man in another town, perhaps only a county or two removed, is often selling the same kind and grade of produce for 25 to 50 per cent above or below what the first is selling for on the same day.

This fact is conclusively shown by the price reports issued weekly by the Extension Service of North Carolina.

This list furnishes prices paid in various towns of the State for staple farm produce.

The report issued November 2d shows variations ranging as high as 57 per cent for the same products.

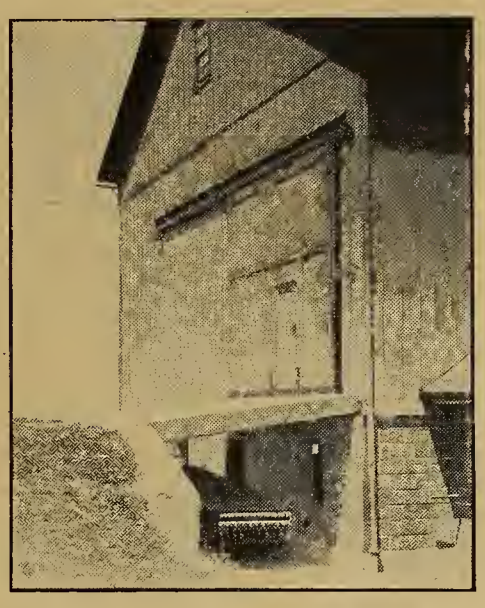
Here are some of the products showing the greatest variation in prices in different towns of North Carolina on that date:

Spring chickens, 45 per cent; hens, 33 per cent; apples, 57 per cent; potatoes, 40 per cent; sweet potatoes, 46 per cent; corn, 31 per cent; oats, 40 per cent.

Judges Farm by Barn

By H. W. Weisgerber

A CERTAIN Wisconsin farmer, who is also a good business man, says that you won't go far wrong if you judge a farm by its improvements. If the improvements are good, he says, the soil is also likely to be in pretty good shape.



The barn shown in the picture is a good example of a permanent improvement. It rests on a hollow-tile foundation, and the foundation rests on a concrete footing. Concrete is best for footing because it forms one solid piece, and if it settles at all it will nearly always settle uniformly.

But hollow tile is good for basement walls because it is so dry and warm. The bridge aud retaining wall are of reinforced concrete, and form a shelter for the manure spreader.

Inconspicuous but important improvements on this barn are the eave troughs and spouting. These keep the rain water and melting snow from dripping off the eaves and makiug the surroundings muddy. A dry barnyard means greater comfort for man and beast.

UNDER a farm registration act passed by the Wisconsin Legislature farm names may now be officially registered upon payment of a fee of 25 cents.

How to Drive Horses

IN MAKING a long drive, let the horses start out slowly for the first few miles. You can then increase their speed, and the trip will be made in a shorter time than if they had been driven fast at the start.

$115 and Worth It

IN THE October 23d issue there appeared a picture of a manure spreader with the price given as $80, which is about the cost of ordinary spreaders of medium quality. The particular one shown, however, had several improved features, including a wide-spreading mechanism. The spreader is narrow enough to go through narrow barn doors, but still in the fields it will spread a wide strip beyond the wheels. The price of this improved spreader is $115, and we take pleasure in making the correction.

THE BIG BULL

THE amazing fact about a Bull Tractor, to the more than 7000 farmers who have given it the test of real work on their farms, is how such a sturdy, dependable, efficient and powerful machine can be built to sell for such a low price. **$645,** F. O. B. Minneapolis.

Horses are a luxury for farm work, in the light of such reports as these: *"I had two four-horse teams in the field at the same time and the Big Bull plowed more and faster than the eight horses besides harrowing the ground at the same time, which they did not do."*—Frank Pokorny, Rogers, Nebr.

Immediate shipment can be made by Bull Tractor Distributors in all farm implement trade centers.

If you'd like to know the "why" and "how" of the "Big Bull" write

Bull Tractor Company
2686 University Ave. S. E.
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Strength Durability Economy

YOU practice intelligent selection in the choice of seed, grain and brood stock in improving your farm products—

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MARVELOUS BUTTER MAKER

Nothing we can tell you here can give you a fair idea of the remarkable ease and speed with which you can make butter with the wonderful Fayway—and better butter than you have ever been able to make with any ordinary churn. The only way for you to be convinced of these facts is to make butter with it on your own farm—to prove everything for yourself. That is why we offer to send you the Fayway without a cent of advance payment—without a deposit—without even a promise to buy—and use it in every kind of butter-making tests for 30 days absolutely at our risk. If the Fayway does not make butter (from either cream or whole milk) in less than half the time consumed by the best churn you ever saw or used—if it doesn't make the best butter you ever tasted—if you don't consider it the most remarkable butter making invention ever offered—we don't want you to keep it. Send it back at our expense. If you decide to keep it, you may pay all cash or on easy monthly payments.

Genuine bronze Ball Bearings make it easiest-to-operate churn ever built. Only churn with ball bearings. Perfectly adjustable to all conditions affecting the churnability of cream.

The New and Improved **Fayway** TRADE MARK **Butter Separator**

The Fayway principle solves the question of finer butter under all conditions. It keeps the fat globules intact. Ordinary churns break them down. Result—greasy, salvy butter. Fayway butter has better body, contains less moisture, keeps longer, looks and tastes better than any "churned" butter. It's the extra fine butter that brings you fancy prices.

5c to 10c More Per Pound

for Fayway butter than for ordinary butter. You can actually get it because of its better quality. And you get more butter because the Fayway recovers all the butter-fat. Ordinary churns leave up to 4% of the butter-fat in the butter milk. Extra profits alone pay for it over and over again.

5 Year Guarantee Only Farm Churn that can stand up under such a strong guarantee. Think of it! We guarantee this marvelous butter-maker for 5 years. With ordinary care it will last a lifetime. This is the machine that has revolutionized butter making on the farm. Don't confuse it with any other churn—the principle is "different."

FREE Buttermaking Course Opens your eyes to bigger butter profits. No matter how small or large a herd you milk you should know the secrets this course reveals. Postcard brings facts and proof. Write today—NOW.

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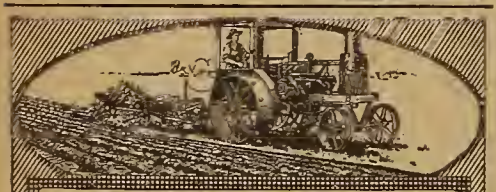

Start Tractor Farming

Bigger Crops, Less Expense Easier Work

A tractor gives you the power you need to practice best farming methods, plow deep and do all your work in the right way at the right time, which means bigger crops. Gives you power that doesn't have to stop for rest or sleep—power that hot weather and hard ground can't stop—power in a concentrated form that one man can handle.

You can't turn a switch and stop a horse eating. But a tractor stops eating when it stops work.

There's a Size Avery Tractor to Fit Your Size Farm

Sliding frame, double drive, two speed gears, low speed heavy duty tractor motors, extra large crankshafts, renewable inner cylinder walls, no pumps or fan. 3-Plow Tractor, $760 cash; 4-Plow Tractor, $1120 cash; 5-Plow $1680; 6-Plow $2145; 8-10-Plow $2475. Avery "Self-Lift" Plows and "Yellow-Fellow" Threshers are also built in sizes to fit any of the above size tractors. We also build a special smaller size tractor for $295 cash.

Write now for new free 1916 Avery Tractor, Plow and Thresher Catalog and learn all the Facts about Tractor Farming, Threshing, Road Building, etc., with an Avery Outfit.

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Ask for address of nearest Branch or Jobber

AVERY

One Man Outfits 6 Sizes Fit Any Size Farm.

Why Horses Balk

Four Little Stories Taken From Real Life

By JAMES C. FERNALD

THE country-bred man had gray hair and resembled the city man. He had lived in New York City many years. He knew something of horses.

The country-bred man stepped out from the Metropolitan Building and saw a crowd and a loaded wagon stationary at the curb. To his inquiry one of the teamsters answered, "That bay horse won't pull a pound." And New York traffic was waiting. The driver on the wagon wanted to whip the animal, but looked doubtfully at the crowd. The Society for the Prevention of Cruelty to Animals was but three blocks away, and a policeman was in sight on the opposite corner. So he held his hand and gave but an occasional and inefficient stroke. The assistant, at the horse's head, was vainly pulling forward on the rein.

The country-bred man stepped up to him, and said: "Try backing that horse. Back him for all you are worth." The young man, after one look at the stranger, took hold of both bit rings, called out to the driver, "Back 'em, Bill!" and threw his strength upon the bit. The willing gray horse lunged into the breeching, and the vicious bay found himself forced backward. Then a principle of horse psychology came into play. The horse has a permanent disposition, but a short memory. This one was determined to resist control, and here was a man forcing him to back! He forgot that he had ever objected to going forward. Happen what might, he would resist that man. He fought, raved, and tugged at that bit until the assistant jumped aside and called out to the driver, "Go ahead, Bill!" The bay horse fairly leaped forward. The willing gray answered word and whip, and that load moved off at such a pace that the assistant had to run to fling himself on over the tailboard. As he disappeared he flashed back a jolly grin.

II

A cross-town car was stopped. A crowd gathered. A wagon piled high with coal was stalled directly upon the track. The line of halted cars and wagons and automobiles was lengthening down the street. The country-bred man stepped from the car to investigate. He saw that the load of coal was all that the two big gray Percherons could pull on a perfect road. But one hind wheel had caught in a break of the asphalt, and they were simply discouraged by pulling in vain. The country-bred man said to the car conductor, "Put a bar from the front of your car to the rear of that wagon and help those horses out."

"No use," said the conductor with a shrug.

"How many horsepower have you?"

"Eight."

"Well," said the country-bred man, "if you should hitch even five or six horses in front of that wagon, don't you think it would move?"

The bar was brought, dubiously and ungraciously, and one or two attempts were futile. Then an intelligent policeman took his stand beside the track to co-ordinate the work.

"Now, all ready!" he called. Then, to the motorman, "Come on!"

Just as the car felt the strain he shouted to the driver of the coal wagon, "Get up, there!" The driver passed the word to the horses with a touch of the whip. The brave fellows started doubtfully, but as they felt the load really stir they lunged into the collar and soon were rolling the wagon gladly up the street.

III

A "tie-up" at Twenty-eighth Street. A loaded wagon with two big Clydesdales stalled across the track. The driver was a moon-faced foreigner, placid and gentle as an ox. Over and over he started up his team in vain. The country-bred man walked up and looked on. He saw that the off horse had two feet of one side on the line of the shiny track. When he would start, as he did promptly at the word, one or both feet would slip, and he would have a struggle to save himself from falling in the harness. The country-bred man called to the driver: "Don't you see that your off horse can't pull his own weight, with his feet on that rail? Swing them across the track till they get started. Then turn them up the street." The patient fellow did what he was told, as much as if the speaker had a right to give him orders. When that horse felt his feet grip the pavement he threw his full power into the pull, and, once the load started, it was an easy matter to make the turn up street. The difficulty was all over.

Many a time when a horse is condemned as balky, the fault is in the driver. Many a willing and honest horse is made actually balky by mismanagement that makes him at first discouraged and at last resentful.

IV

A ferryboat was whistling vainly for a start. Right in the middle of the bridge leading up to the deck a loaded wagon waited immovable. Of the two horses, a bay and a gray, the bay had lost the imagination of movement. That bay had chosen, with malicious ingenuity, the very best strategic location to hold up interstate commerce between New York and New Jersey.

The country-bred man said to the traffic manager: "Take off a pair of horses from one of those other wagons, hitch them on ahead, and yank that horse right on board." The traffic manager spoke to an assistant, and the plan was improved. A cable about sixty feet long, with a stout hook at the end, was brought, and hooked to the pole of that wagon. "Now, every man take hold!" said the manager. Some twenty-five men seized the cable and, at the word, joined in one mighty tug. The faithful gray horse lent his aid, while the bay was so furious to find the wagon moving in spite of him that he lashed out in a vicious kick. But he could not even kick in comfort, for the wagon was on his heels so fast that he had to put his feet down to jump out of the way. So, galloping, kicking, forced to gallop again, he was rushed up on deck, where he could only viciously shake his head.

Cows Make $70 Apiece

TWELVE Holstein cows owned by Charles A. Smedley of Kensington, Kansas, averaged 250 pounds of butter-fat a cow last year, and made him a net profit of $70 a cow. The price of the cow is not as important as the yield. These cows were a better buy at $300 each than they would have been at $25 if they would yield only 120 pounds of butter-fat a year.

Well-Planned Farm

By F. L. Dennison

SIXTY acres of western Tennessee land, every foot of which, except the house and barn site, is under cultivation, pays because of plans that were laid several years ago.

The farm is rectangular, and has a highway at one end. There is a "branch" with a deep run across it near the center, and from thence down one of the sides. Northern readers would perhaps call it a small ravine.

After buying the piece of land the owner's first move was to tear away the old fences and build new ones, dividing the farm into fields arranged as in the diagram. It was a great gain to have the farm arranged so that each field could be pastured without having to go through some other one. Also, it was indispensable for proper crop rotation to have the fields of nearly a size.

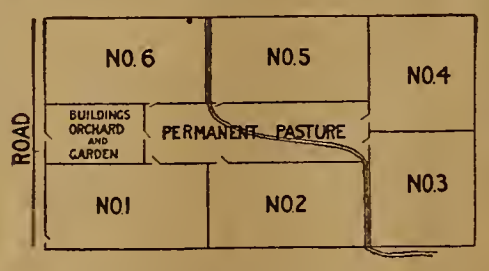
The next step was to tile-drain the place thoroughly. The money spent for tiling was paid back by the increase of the first year's crop.

In the meantime a dwelling had been built and other buildings erected. An orchard had been set out and a garden provided.

With the field arrangement illustrated any field can be entered from the pasture.

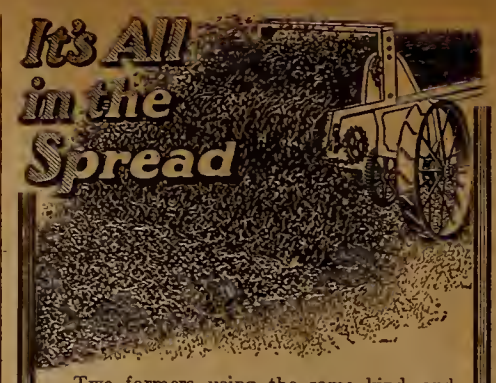
On this farm the standing policy is to save and apply at once all the manure produced, as well as to buy all that can be had.

Below the diagram is the scheme of the five-year rotation practiced. Field No. 6 is in a truck crop every year because of its convenience to barn and road.



THE ROTATION

1st Year	*2d Year*	*3d Year*	*4th Year*	*5th Year*
Corn, followed by peas	Cotton	Oats, followed by peas	Wheat, Clover	Clover



Two farmers using the same kind and amount of manure will produce varying crops. One spreads right and the other doesn't. Right spreading means prompt and even spreading, neither too thick nor too thin and without waste in either barn or field.

Manure has a fertilizing value of $8.00 to $10.00 profit per animal. The only way you can get this full value is by the use of a proper spreader. Such a machine is the reliable, guaranteed

NEW IDEA Registered U.S. Pat. Off.

the gearless spreader. Operates by strong chain. Conveyor gathers all the manure and does not race going up hill. Double cylinders insure thorough pulverization without clogging. The New Idea can be loaded full 35 inches high. Only 43 inches at highest point. Wheels track.

Spreads 7 ft. Wide Across 3 Corn Rows Spreads and Pulverizes a Load in 3 Minutes

The patented revolving distributor causes this remarkable spread. It goes beyond the wagon tracks so it is never necessary to drive over the spread manure. Variable spread from 3 to 18 loads per acre. Guaranteed against defective material and workmanship.

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A book of information on manure. Tells how to spread it to get best results. Worth money but we give it free. Ask the New Idea dealer or write us direct.

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"Spreader Specialists"
377 First St. Coldwater, Ohio

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ENTIRELY a new book—new chapters—tells facts about every type of silo—home made, stave, brick, cement, tile, metal, pit, etc. Tells best for your needs—impartial suggestions for making most profits. 264 pages—10 page index—Copyrighted Nov. 1914, covers 41 silage crops. Send for new book; it beats all previous editions. Write today. Mailed for 10c. Mention this paper. **Silver Mfg. Co., Salem, O.**

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It is penetrating and healing. Dollar size contains 6 times the 25c.

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This NEW, Splendid COLOR PICTURE of M. W. Savage's Three World Champion Stallions is on LARGE 22 by 28 Size, Extra Heavy, and Superfine Enamel Stock. Mailed in Extra Heavy Mailing Tube,—to insure Safe Delivery. Free of Advertising and is Worthy to Hang in Any Home or Office. It is a Very Fine Horse Picture. I Want to Mail You One—Absoluteiy Free, Postage Prepaid, IF You Are a Stockowner Over 21 and Answer 3 Questions.

FIRST—In What Paper did you Read this Free Picture Offer?

SECOND—How Many Horses, Cattle, Sheep or Hogs do you own?

THIRD—Have you ever used the World Famous, International Stock Food Tonic, a Grain Saver for Horses, Cattle, Sheep or Hogs?

YOU MUST ANSWER THE QUESTIONS

International Stock Food Co. or Write

M. W. SAVAGE, Minneapolis, Minn.

THESE THREE STALLIONS COST $105,000. CASH.

Dan Patch 1:55, World Champion. **Minor Heir 1:58½ and Geo. Gano 2:02, Champion Team 2:02.**

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When M. W. Savage says Free Picture,—it means Free,—Indisputably FREE. You do Not have to buy goods,—You do Not have to promise to buy any goods,—You do Not have to do any work and You do Not have to pay postage,—but these Splendid, Art Pictures,—22 by 28,—in 14 Colors,—are mailed right to Your Door,—without a single cent of cost. M. W. Savage believes he is offering you FREE, the Finest and Most Beautiful —Art Picture,—in the World, of Three World Champion Stallions. Fine Original Colors Reproductions,—of Original and Exclusively Owned Paintings,—often Retail at $3.00 to $5.00.

22 by 28 PICTURE
14 COLORS

WONDERFUL AND SENSATIONAL DAN PATCH RECORDS—THAT WILL PROBABLY NEVER BE EQUALLED IN YOUR LIFE TIME

Some Horse may go as fast or faster but when will ANY HORSE do what Dan Patch has done,—and Every Day for over Fourteen Years,—Dan Patch,—has had **International Stock Food Tonic**–as also have My Other Stallions and 250 Brood Mares and Colts. DAN has paced **One Mile in 1:55, One Mile in 1:55¼, Two Miles in 1:56, Three Miles in 1:56¼, Fourteen Miles** averaging 1:56½, **Thirty Miles** averaging 1:57½, **Forty-Five Miles** averaging 1:58, **Seventy-Five Miles** averaging 1:59½, **120** Miles averaging 2:02½, **132** Miles averaging 2:04¾, **Lowered World Records 14 Times,** Mile Record, 1906 1:55, Half-mile track record 2:01. Mile Wagon record 1:57¼, Two Mile Record 4:17, Mile to high-wheel sulky 2:04¾, Half-Mile record :56. Half-Mile to wagon :58½, Half Mile on ½ Mile track :58½. Dan Patch Never lost a race. **No Horse has Ever** officially equalled Dan's 1:55 Record and he was Never hitched double to help pull him along with a running horse and **NEVER went behind a wind shield.** Dan Patch has Traveled over 100,000 Miles during his Speed Exhibitions. Over **Two Million Farmers and Stockmen** have Written Me for Pictures of Dan Patch 1:55,—and this is **Indisputable Proof** that he is the **Most Popular Horse** in All The World's History. Minor Heir and Geo. Gano,—are the Champion Team of the World,—with a Wagon Record of 2:02, and Geo. Gano is the Champion, Pacing Saddle Horse of the World,—with a Record of 2:10¾. Dan Patch 1:55,—has also proven to be one of the Greatest of Sires and has Over ONE HUNDRED OF HIS COLTS IN THE OFFICIAL LIST, 22 in 2:10 List and Is The ONLY STALLION in World's History,—to have Over 100 Colts in the Official List,—and being the Sire of only 158 Colts,—over two years old. ALL THREE STALLIONS,—are owned by M. W. Savage, Minneapolis, Minn.

72 PIECE SET OF BEAUTIFUL, $12.75 DISHES, ABSOLUTELY FREE.

My New and Special Set of 72 Beautiful, **Genuine La Francaise Dishes—Absolutely Free,—with the specified Three Pails of International Stock Food Tonic,—on 9 Months Free Trial,—** Entire Three Pails are to be used for Your Horses or Cattle, or Cows or Hogs,—**Without Your Sending a Cent of Money.** This Fine Set of 72 Dishes,—is Absolutely Free and At Once and Regardless of whether you Ever Remit for the International Stock Food Tonic or not. You are Never to remit for the Three Pails unless it can be used at the Extremely Low Using Cost of,—**3 FEEDS for ONE CENT,**—and unless it gives More Strength, Health and Vigor and Saves 70 Bushels of Oats, per year, for Every Team you work. Unless it makes Each One of Your Cows give Two to Four Quarts,—More Milk Every Day. Unless it Makes Your Hogs, Shoats or Pigs,—Grow and Fatten Amazingly,—on Less Grain and in a Shorter Time and also Preventing Hog Cholera, by Increasing the Number and Vitality of Phagocytes in the Blood and these Destroy all Hog Cholera Germs that may enter the system. You are to be the Sole and Only Judge of Your Results,—and I agree to Accept Your Own Statement,—but **the 72 Dishes are Yours,—Perfectly Free,—in either case.** International Stock Food Tonic,—World Famous for over 26 Years as the Most Dependable, Blood Purifying Tonic and Aid to Digestion and Assimilation,—and the ONLY Preparation that can be used at the Extremely Low Cost of,—**3 FEEDS for ONE CENT,**—and Positively Guaranteed as to certain specified, big money making results. Over Two Million Farmers have proven that there are no strings tied to any Free Offer I ever make. ☛ This Set of 72 Pieces of the **Famous La Francaise Dishes.**—is Pure White, Semi-Porcelain,—with Artistic, Royal Blue and Gold Decorations of Elegant and Exquisite Beauty,—just as produced in European Potteries,—for over One Hundred Years, under a Secret Process, but now made in America by one of the Largest Potteries in the World. The 72 Dishes are All Large Size Dinner Dishes,—of Guaranteed Extra Quality and Great Beauty,—such as I use in My Own Home and such as you will Highly Appreciate in Your Home, or for a Beautiful Wedding Present. **WRITE FOR ACCEPTANCE BLANK,—TO FILL OUT AND MAIL ME FOR DISHES.**

The Editor of This Paper has a Set of My **Splendid La Francaise Dinner Dishes** and Knows that the Dishes are Exactly as Described. This Set of Dishes often retails at $12.75 and I Save you the Entire Retail Price. Ask My International Stock Food Tonic **DEALER,**—in your City,—about My Absolutely Free Offer of this 72 Piece Set of Dishes and also my $15.00 Cash,—Dan Patch Gold Stop Watch Certificate, or about My 599 Other Free Premiums,—offered through,—My Dealers,—for Your Saving Labels from Any of My 49 Different Preparations,—or You Can Write and Ask M. W. Savage, Minneapolis, Minn.,—**when requesting PICTURE,**—for his,—**ACCEPTANCE BLANK** and also Beautiful, Color Illustrations and Complete Description of Every Dish,—in Every Free Set.

DON'T DELAY or You may Miss this Extraordinary Opportunity of Securing a Big Set of Beautiful and Extra Quality Dishes,—**without their Costing you a Cent,**—Now or at any other time. Your Family and Every Family,—always needs more dishes,—on account of Constant Accidental Breakage. I offer different Sets of Beautiful, Extra Quality Dishes,—that any Woman will be Proud to have in her home. Let M. W. Savage Keep Your Home Supplied with all the Beautiful,—High Class Dishes you may need,—Absolutely Free. Don't pay out money for Dishes,—when I will Supply you with the **Famous La Francaise Dishes,**—or Conventional Patterns,—**without your paying me a Cent,**—either at time of shipment or at any other time. OR IF YOU PREFER,—I will send you a Beautiful, High Quality, 25 Piece Set of **Oneida Community Reliance Silver Ware,**—,—the kind you read about in—Saturday Evening Post,—Ladies Home Journal,—Good Housekeeping, Etc.

100 Piece Set of Dishes,—Absolutely FREE.

I have a New and Special Set of 100 of the Beautiful and **Genuine La Francaise Dishes** or other kinds,—Absolutely Free,—for you if you will accept the specified Four Pails of International Stock Food Tonic,—**on 9 Months Free Triai,**—with the Same conditions and Agreements,—as stated above. This 100 Piece Set is Exactly the Same Quality and Decorations,—as the Other Set described above. It often retails for $17.50. I can mail you an Engraving,—showing Every One of these Dishes,—so that you can See Each Dish, and Know Just What Kind of a Set You Will Receive. All you have to do, is to Test International Stock Food Tonic,—**3 FEEDS for ONE CENT.** Guaranteed to make you Extra Money for Horses, Cattle, Sheep or Hogs. ☛ **DO NOT SEND ME A CENT OF MONEY.**

42 Piece Set of Dishes,—Absolutely FREE.

I have a New and Special Set of 42 of the Beautiful and **Genuine La Francaise Dishes,** or other Patterns,—Absolutely Free,—for you, if you wili accept the specified Two Pails of International Stock Food Tonic,—**on 9 Months Free Triai,**—with the Same Conditions and the same Agreements as stated above. My 42 Piece Set of La Francaise Dishes, is Exactly the Same Quality and Decorations as the Larger Set described in My First Offer. **Your Dishes Are Absolutely Free,—Regardless Of The Results of Your SPECIFIED Test of International Stock Food Tonic.**

21 Piece Set of Dishes,—Absolutely FREE.

I have a New and Special Set of 21 Beautiful and **Genuine La Francaise Dishes** or other Kinds,—Absolutely Free,—if you accept the specified One Pail of International Stock Food Tonic, —**on 9 Months Free Triai,**—with the Same Conditions and Agreements as stated above. This 21 Piece Set is Exactly the Same Quality and Decorations,—as the Larger Set described in my First Offer. I can mail you A Splendid Color Engraving,—showing Every One of these Dishes,—so that you can see Each Dish in its Color Decorations and Know just what Kind of a Set you will Receive.

All My Free Premium Offers are Based on Fair and Square, Every Day, Practical, Profit Sharing Co-operation between Manufacturer and Consumers. I buy my Premiums at the Very Lowest Manufacturing Prices but **I Save You the Big Retail Price. Ask Dealers About My 599 Free Premiums,—for SAVING LABELS from My 49 Different Package Preparations. They are the Greatest and Most Sensational, Profit Sharing,—Free Premium Offers in the World. EVERY LABEL Counts FULL FACE VALUE on 599 Free Premiums. YOU MUST WRITE FOR MY ACCEPTANCE BLANK FOR DISHES.**

AN EXTRA,—ADDITIONAL $15.00—ABSOLUTELY FREE.

Is My Agreement to Send You Free,—if you will accept ANY ONE of My **9 Months' Free Trial Offers on International Stock Food Tonic,—A $15.00 Cash, DAN PATCH GOLD STOP WATCH CERTIFICATE**—which has an Absolute Cash Value of $15.00,—**DO NOT SEND ME A CENT.** You will be Delighted to carry my Beautiful, Gold Watch. My Certificate will be accepted at Any Time, from Any One,—as a $15.00 Cash Payment, on My Dan Patch Gold Stop Watch. M. W. Savage is Sole Owner of Dan Patch Watch. The Only Successful, High Grade, Regular Gold Watch and Gold Stop Watch,—**Combined,**—Ever Made in America.

YOUR WIFE WILL BE DELIGHTED WITH MY GENUINE LA FRANCAISE DISHES.

EW

I'll Rid Your Hogs of WORMS

GILBERT HESS, M. D., D. V. S.

Your hogs are almost certain to be tronbled with worms right now; in fact, at all seasons of the year. Unless you treat for worms and get rid of them yon can't fatten your swine at a profit.

How about the spring pigs? The chances are that your brood sows are worm-infested. This means stunted litters—pigs from a wormy sow can't get the right start.

I guarantee that if you feed my Stock Tonic regularly as directed, you will rid your hogs of worms, they will keep toned up and vigorous, resist disease better and fatten quickly and cheaply.

Dr. Hess Stock Tonic

25-lb. pail, $1.60. 100 lbs., $5.00.

A Fine Conditioner—A Sure Worm Expeller

Your horses, cattle and sheep are apt to be out of fix right now, because animals off pasture and on dry feed are deprived of the laxatives so plentifully furnished in grass.

Feed my Stock Tonic to your animals now. It contains tonics for enriching the blood, tonics to help their digestion and help them assimilate their feed better, as well as laxatives for keeping the bowels regular and clean.

Remember, when you buy my Stock Tonic from your local dealer you save peddler's horse, team and traveling expenses, and the small dose quantity will prove that my Stock Tonic is the most economical, too. Now read this guarantee:

So sure am I that Dr. Hess Stock Tonic will positively rid your hogs of worms and keep your stock healthy and vigorous, that I have authorized my nearest dealer to supply you with enough for your stock, and if it does not do what I claim, return the empty packages and get your money back.

25-lb. pail, $1.60; 100-lb. sack, $5.00; smaller packages as low as 50c (except in Canada and the far West and the South). Why pay the peddler twice my price?

Dr. Hess Poultry Pan-a-ce-a

I guarantee that this fine poultry tonic will help your hens lay. It will keep them toned up, arouse the dormant egg organs and keep your poultry healthy. Easy to feed and very economical—1 cent's worth a day is enough for thirty fowl. Never sold by peddlers. 1 1-2 lbs. 25c; 5 lbs. 60c; 25-lb. pail, $2.50. (Except in Canada and the far West.)

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Comes in handy sifting-top cans. 1 lb. 25c; 3 lbs. 60c. (Except in Canada and the far West. I guarantee it.

Send for my book that tells all about Dr. Hess Stock Tonic—it's free.

DR. HESS & CLARK, Ashland, Ohio

APPLETON WOOD SAWS

Strong, rigid, simple; stand years of hard service. Frames of heavy bar steel, or hardwood braced and bolted. Non-heating, self-adjusting boxes. 10 styles. The Appleton

GRINDER

has made good for 30 years. Strong, durable. Coarse or fine grinding—ear corn or small grain. Ball bearing, ring oiler, light running.

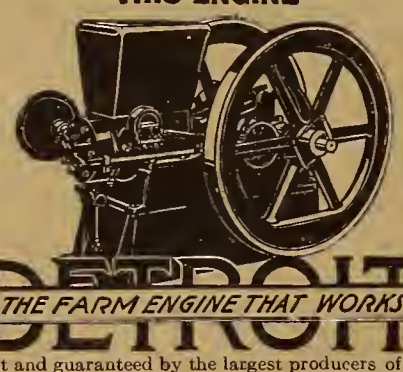
ENGINES

of Appleton Quality deliver more h. p. with least use of fuel; and wear for years. Sizes, 1½ to 22 h. p. Wood-Saw, Grinder and Engine catalogs free; write for ones you want.

Appleton Mfg. Co., 609 Fargo St., Batavia, Ill.

Only $12.35 per H. P.

THIS ENGINE



DETROIT

THE FARM ENGINE THAT WORKS

Built and guaranteed by the largest producers of farm engines—a regular glutton for work—simple, durable, powerful—four cycle, suction feed, make and break ignition—every part interchangeable—fully tested. Guaranteed to Develop Rated H. P.

SAVES FUEL, TIME, LABOR, MONEY

8 Horsepower Detroit only $98.75

Can you beat that? Write for big illustrated Engine book to-day

Full Line Detroit Engines 1½ horsepower up

DETROIT ENGINE WORKS 133 Bellevue Ave., Detroit, Mich.

Kirstin ONE-MAN STUMP PULLER

Makes Land Clearing Easy, Economical, Practical

You can't realize the wonderful *strength, speed and power* of the new Double Leverage Model Kirstin until you see one at work. Compound leverage gives any man the strength of a giant—enables him to quickly pull biggest stumps with ease. The Kirstin way is quickest, easiest and cheapest way to clear stump land. No heavy cumbersome machines to pull around, tip over or get stuck in boggy places. No sweeps to break, no horses to risk, no dynamite, no danger. With a Kirstin you simply walk into your stump field and "clean it up" in no time at all. You can

Try The KIRSTIN For Ten Days

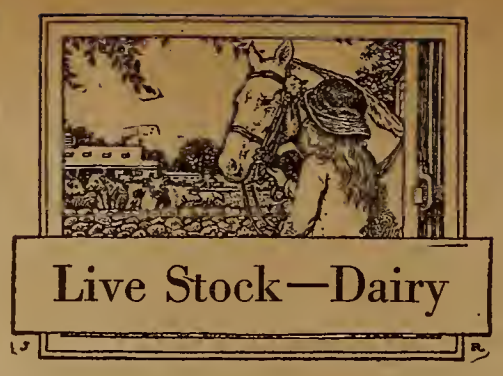
Used Anywhere—Hills, Swamps, Rough Ground or Thick Timber.

Prove to yourself that it clears your land cheaper. Let the Kirstin's superior features demonstrate their value right on your own farm. Less weight—greater strength—lower cost—greater speed—all these valuable qualities are made possible by the Kirstin Quick-Detachable Connections, Auto Release, Non-Twisting Cable and other Kirstin patented features.

Write Today For The Big New Kirstin Catalog

which gives you full details about the Improved Double Leverage Kirstin One-Man Stump Pullers, Kirstin Service, Free Information Bureau, Time Payment Plans, etc. Agents Wanted.

A. J. KIRSTIN CO.
6326 Ludington St., Escanaba, Mich.



Live Stock—Dairy

Report Shows Prosperity

SECRETARY of Agriculture Houston's report for 1915 has jnst been made public. It covers 55 bnlletin-size pages, and is well worth reading in full. Here are some of the ontstanding points of interest:

The war has brought increased prices for most farm products. Agricultural exports reached nearly a billion and a half dollars, or about a third more than the previous year.

Exports of horses and mules increased nineteenfold.

Cotton and tobacco were the only important crops that suffered a decrease.

Animal diseases caused farmers of the country to lose $217,000,000 last year. Hog cholera, Texas fever and ticks, and tuberculosis are the most serious scourges.

The 1914 outbreak of foot-and-mouth disease was the most extensive ever known in this country. The delay in controlling it at first was due chiefly to the mild infection which made the disease hard to recognize.

The Department of Agriculture disclaims responsibility for the pnrity of hog-cholera serum even in the government-inspected plants, on the grounds that supervisory inspection cannot be as efficient as complete control. More effective control of serum manufacture is advised and plans are proposed.

Citrus canker, an infectious disease affecting citrus fruits, threatens the Gulf States frnit indnstry, but work of eradication has progressed satisfactorily.

The chief reasons for delay in developing a home supply of potash for fertilizers are (1) the uncertainty as to how long the war will last and a fear of foreign competition, (2) the element of doubt as to ownership of the Pacific Coast kelp beds which are a conspicuous sonrce of potash.

More than a thonsand counties now have county agents or demonstrators. Over two thirds are in the Sonthern States.

The national forests are being opened up for grazing under pay permits. Thirty-one thonsand stock owners shared this privilege last year.

The United States cotton-fntures act, which went into effect Febrnary 18, 1915, is explained. This is a tax statute applying to all contracts for the fnture delivery of cotton. It is intended to eliminate unfair competition and prevent sharp fluctuations in prices.

The new government cotton standards, covering nine grades, have now been generally accepted and have foreign recognition.

The conspicuous merit of Secretary Houston's 1915 report is its freedom from departmental detail. It deals chiefly with the broad services of the Department to the nation, and shows efficient activity.

How to Cement Pit Silos

BUILDERS of pit silos should be careful about the cement plastering. Make the plaster of one part good sand and two and a half parts Portland cement, in two coats, each about three quarters of an inch thick. Let the first set slightly before pntting on the second. Keep it wet for a week. If the earth walls are dry to plaster on, wet them before plasteriug. Keep the plaster shaded for several days.

Hogs Gain on Artichokes

By A. J. Legg

ALL of the artichokes it would eat and an ear of corn fed twice a day made a four-months pig of mine grow rapidly. The pig was penned up. I never saw a pig do so well.

My brother turned a sow and pigs on a field of artichokes so the hogs conld harvest the artichokes as they were wanted. The sow was given a moderate grain ration. There were nine pigs in the litter, very nniforn in appearance. When these pigs were four weeks old I weighed one and it weighed 18 pounds.

I have used artichokes for sows with yonng pigs early in the spring, and I think the artichokes have a food value greater than the chemical analysis wonld indicate. The hogs need something of a succulent nature early in the seasou before they can get grass.

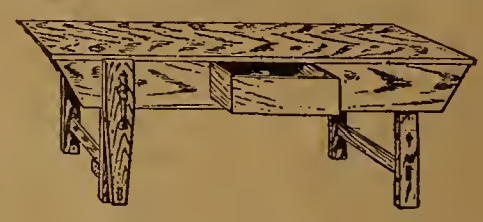
The worst objection to the artichoke is its persistence in staying in the soil from year to year. About the only way to get rid of them is to pasture the land for a year or two. Cattle will keep the artichoke plants eaten off to the ground. This will kill the plants.

The food value of artichoke tubers is practically the same as that of potatoes. According to analyses given in bulletin No. 22 issued by the U. S. D. A. artichokes rate higher in food valne than either beets, turnips, or carrots. In production the artichoke varies with fertility of soil. If the soil is poor the crop of tnbers will be very poor, bnt if the soil is fertile and well adapted to the crop, it is not unreasonable to expect from 500 to 600 bushels per acre.

As to the practical valne of artichokes, the cost of harvesting and storing wonld be too high to make them profitable as a hog feed. But the artichoke tnber is not injnred by freezing, and they will stay in the gronnd all winter and are as good when spring comes as they were in the fall. I have fed artichokes to cows and calves with good resnlts. The chickens also relish artichoke tnbers in the winter season.

A Good Farm Bench

THE top of this snbstantial work bench measures 3x8 feet, and its height is 34 inches. Made of a good grade of yellow pine, the lumber and hardware will cost about $4.50. Here is the bill of material:



3 peces 1⅛″x12″x8′ 0″—top.
2 pieces 1″x12″x8′ 0″—sides.
4 pieces 1″x12″x2′ 6″—end and center crosspieces.
2 pieces 1″x3½″x2′ 6″—cross rails.
1 piece 1″x3½″x1′ 8″—vise piece.
4 pieces 2″x4″x2′ 9″—legs.
2 pieces 1″x8″x2′ 6″—drawer sides.
1 piece 1″x8″x2′ 0″—drawer ends.
3 pieces ½″x9″x2′ 6″—panel, drawer bottom.
1 piece 2″x8″x2′ 9″—vise block.
Use waste pieces for drawer slides.
1 vise screw 1¼″.
2 lb nails 8d, common.
2 lb nails 8d, casing.

Most carpenters prefer a bench stop, and this can be added if desired. A bench of this sort and a few good tools are an encouragement toward useful carpenter work that would otherwise be left undone for lack of a place to work.

The Fat-Test Basis

THIS year, for the first time, New York City dealers are paying for milk according to its test. Heretofore the price has been such and snch per hundred pounds, except in cases where premiums have been paid for special milk from high-class dairies. The new fat-test basis has been received with cousiderable dissatisfaction iu some qnarters. Naturally, every mau jndges a new thing by the way it affects his particular business. A good many of the dairymen have Holstein cows, and the new method of payment, discriminating as it does against low-testing milk, hits the Holstein owners pretty hard. They contend that there is as much nourishment in Holstein milk as in any milk, and that the casein and total milk solids are just as important as the butterfat.

However, there is no dodging the truth that butterfat is the most valuable constituent in milk, and as long as cream brings higher prices than milk, high-testing milk will have a commercial advantage over low-testing milk. The creameries of the conntry long ago adopted the plan of buying cream on a bntterfat basis, and the samc method under present market conditions is eqnally fair with milk. Naturally, there is as much rejoicing in the Jersey and Guernsey camps as there is opposition among the followers of the famons "black-and-whites."

HAS anyone besides Judge Schooler tried the plan of growing flax in the corn belt as a supplement to the corn diet for feeding cattle?

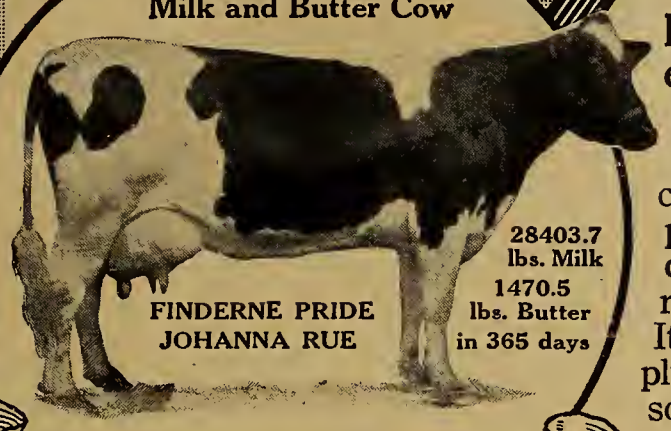
Why Depend on Packers?

WHY should the farmers of the United States be dependent on the great packers for their stock market? Denmark, with a fifth as many hogs as Iowa, has over forty co-operative slaughtering plants. If Iowa had them as numeronsly she would possess about two to a connty. The average Danish co-operative slaughter house kills 30,000 hogs yearly, but even at that saves all but the sqncal, the same as they do in Chicago.

E

THE RECORD BREAKING-RECORD MAKING FEED FOR DAIRY COWS

World's Champion Milk and Butter Cow



FINDERNE PRIDE JOHANNA RUE

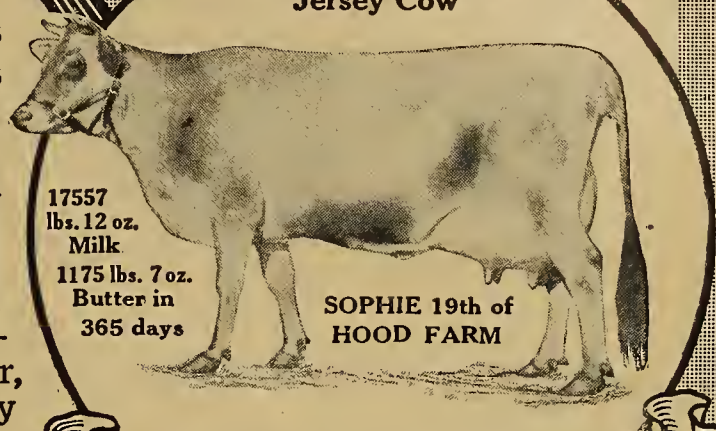
28403.7 lbs. Milk
1470.5 lbs. Butter in 365 days

Gives Schumacher Feed Much Credit

"We have made another world's record with our Holstein cow 'Finderne Pride Johanna Rue No. 121083.' I am glad to say that during her test she was fed mostly on your SCHUMACHER FEED, which in my estimation is a very valuable feed for dairy purposes."
(Signed) Bernhard Meyer, Finderne, N. J.

Performance alone has placed **Schumacher Feed** at the top. It has earned its recognition as the World's Champion Feed for Dairy Cows, because it has been such an important part of the grain ration of practically every World's record made in recent years. It has proved its ability to supply that power, energy and vigor, so necessary to keep the dairy cow "up and coming" every day in the year, not only in producing greater yields of milk and butter fat, but in building up and maintaining her physical powers as well. If dairymen such as owners of these famous cows will "stake" their reputation and chances on **Schumacher Feed,** you can "stake your bottom dollar" that **Schumacher Feed** will help your cows make better records for you. What is BEST for the World's Champion cows, surely is BEST for yours. **Schumacher Feed** is composed of finely ground products of corn, oats, barley and wheat, kiln dried and so skillfully blended that when fed on the following feeding plan to dairy cows it cannot be equaled.

World's Champion Jersey Cow



17557 lbs. 12 oz. Milk
1175 lbs. 7 oz. Butter in 365 days

SOPHIE 19th of HOOD FARM

Here's What Her Owner Says About Shumacher Feed

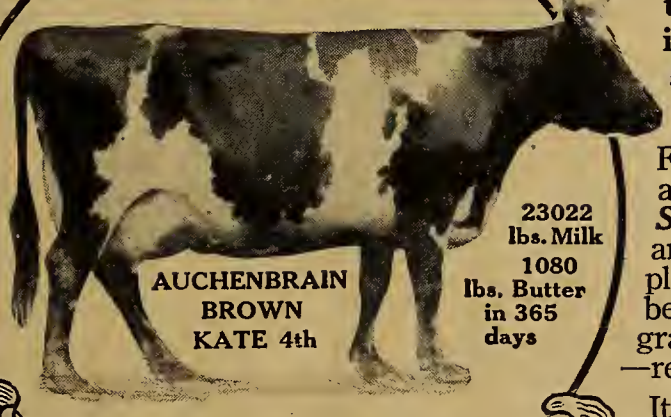
"It will probably interest you to know that we have been feeding SCHUMACHER FEED to Sophie 19th, of Hood Farm, 189748. She finished her last record January 20, 1914, which makes her the Champion Jersey Cow of the world, and stamps her the greatest dairy cow living or dead. We consider SCHUMACHER FEED a splendid feed for dairy cows and a strong factor in increasing the milk and butter production."—Hood Farm, J. E. Dodge, Mgr.
Lowell, Mass.

SCHUMACHER FEED

And the Schumacher Feeding Plan

Feed as the grain part of the ration, three sacks of *Schumacher Feed* to one sack of gluten, oil meal, linseed meal, dried brewer's grains, dried distiller's grains, malt sprouts, Blue Ribbon Dairy Feed or other high protein mixture. When cottonseed meal is used, feed four to five sacks of *Schumacher Feed* to one of cottonseed meal.

World's Champion Ayrshire Cow



AUCHENBRAIN BROWN KATE 4th

23022 lbs. Milk
1080 lbs. Butter in 365 days

Would Not Be Without Schumacher Feed

"We had such good results with your SCHUMACHER FEED, fed our world's champion cow, Auchenbrain Brown Kate 4th, who produced 23022 lbs. milk, 1080 lbs. butter, in one year, that we have since fed it to all of our test cows."
Yours truly, Penshurst Farm, (Signed)
E. S. Deubler, Supt., Narberth, Pa.

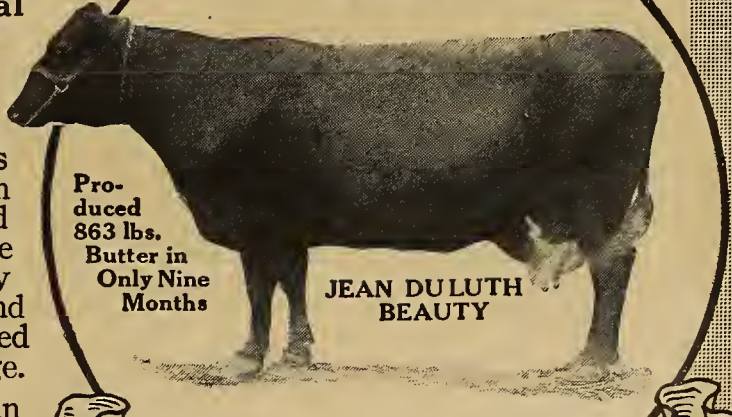
For putting horses, hogs, calves and cattle in "top notch" condition ***Schumacher Feed*** will be found an ideal ration, because it takes the place of any grain ration you may be feeding, and furnishes a ground grain ration that is properly balanced—ready to feed with any roughage.

It saves the waste in whole grain feed and produces much better results. A trial will convince you.

Schumacher Feed is the most palatable feed mixture obtainable—a feature of vast importance in any ration. Your dealer will supply you with SCHUMACHER FEED. If he can't—send to us.

Write today for our new illustrated booklet, **"World's Greatest Cows and How They Made Their Astonishing Records."**
We send it FREE and POSTPAID.

World's Champion Red Poll



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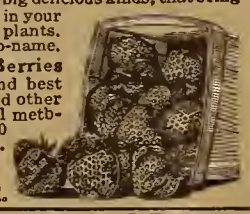

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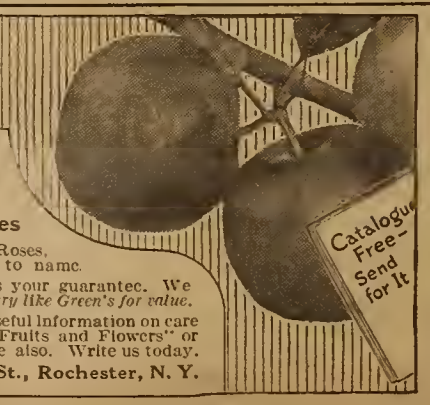

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Crops and Soils

Held-Over Seed Corn

THERE is quite a lot of 1914 crop cribstored corn that is a safer seed-corn prospect than much of the 1915 crop. Here is a sensible recommendation coming from a grower who has used held-over seed corn.

He finds the valne of the old cribbed corn for seed purposes by selecting 100 ears from different parts of the crib that will fairly represent the entire quantity stored. He makes a germination test, nsing one kernel from each of the 100 ears. If 85 or more of the keruels make a vigorous growth, the corn is a fairly good seed prospect.

The corn is then left nnshelled in the crib until wanted for seed, but another test is made in the spring as a double safeguard.

Nation's Crop Inventory

FINAL crop estimates for 1915 have been announced by the U. S. Department of Agriculture as follows:

Wheat	1.002.000.000 bushels
Corn	3,090.000.000 bushels
Oats	1.517.000.000 bushels
Cotton	10.950.000 bales
Apples	76.700.000 barrels
Potatoes	359,000.000 bushels

Compared with last year, the corn, wheat, and oat crops are heavier; cotton, apples, and potatoes are less. Market prices have since a year ago declined on corn, wheat, and oats, and increased on potatoes, apples, and cotton. The greatest decline of any important crop was cotton, which is less than three quarters of last year's production.

Makes Sweet Clover Pay

By Ben H. Hart

SWEET CLOVER growing wild looks good to me.

In 1913 I gathered by hand $4 worth of sweet clover seed. In 1914 I gathered enough to amount to $11, which I sold to farmers at the rate of $5 a bushel. With my brother's help not over a day's time was consumed all told in gathering the 1914 seed.

In 1915 I gathered about eight bushels in six days. Some days I gathered as high as one and one-half bushels to two bushels in a day.

I have a seed-gathering device made ont of an old binder canvas with five inch boards nailed on the sides forming a box which is abont five feet wide and five or six feet long. I gather the seed anywhere I can find it on steep railroad banks or along highways.

By means of a strong cord fastened on two opposite sides of the box near the front, I place the seed catcher as near as possible to the clover, and with a strong green stick I pull an armful and strike it a few times and in this way shell the clover into the box.

The seed I have gathered in this way is of very best quality and the farmers are glad to get it, and call for more.

The work is hard, but I like it, for it brings the money, and boys always have use for money.

Where Grain is Graded

GRAIN is inspected by state authority in Illinois, Minnesota, Missouri, Kansas, and Wisconsin. It is inspected by grain exchanges in other States.

Markets having state inspection are Kansas City, St. Louis, Chicago, Dulnth, and Minneapolis.

Government grades of grain have been adopted by all terminals except New York, Philadelphia, Boston, and Baltimore.

Lime Makes Land Good

By J. F. Barker

WHETHER or not a farmer could afford to apply four tons of ground limestone per acre at a cost of $3 per ton delivered to his farm, would say that so heavy an application is advisable only on soils very distinctly in need of liming. Such soils, however, are very common in New York, and from my personal knowledge are also very common in southern Ohio; and where the soil is badly in need of lime as this, such an application will work such great improvement that there is no question whatever about its being profitable. In fact, the longer liberal liming is delayed on these soils the greater will be the loss.

By an application of four tons of ground limestone per acre and 500 pounds of acid phosphate or basic slag, we have been able to grow good crops of alfalfa on land in New York so poor that it could be bonght for $10 to $20 an acre, and in some cases was practically abandoned.

Where no limestone had been applied, absolntely no alfalfa could be grown, and on some of these soils we have found it necessary to apply nearly double this amount of limestone to insnre success with alfalfa. The great transformation worked on snch lands by the application of limestone actually increases their selling value from $25 or less per acre to $100 or more, and gives a crop of three to four tons of alfalfa hay per acre, the value of which you can fully appreciate.

Jack-Knife Test Failed

ONE Indiana farmer has right-about-faced on seed-corn testing. Previous to last spring he used only his eye and jack-knife to determine the germinating quality of all the seed corn he planted.

Influenced by the talk of his county agent, he made a germinator last spring and tested 196 ears of his seed corn. He put into his tester no seed except what had passed his eye and jack-knife test. He boasted that all the seed going into the tester would grow. Bnt ont of the 196 ears, 26 failed to show growing quality fit for seed.

This proportion of dead seed, if planted, means a loss in yield of from $10 to $15 per acre, other conditions being equal.

Think Now About It

THIS field has been in corn every year for eight seasons. It is so badly affected by corn-root worms that 90 per cent of the stalks are down. The remedy is rotation of crops.

Winning on Stump Land

THE problem of wresting a living from cut-over lands while the stumps are in possession is a poser for many a man now tackling logged-off laud.

An expert in this line, A. J. Maguire of Minnesota, recommends this plan:

"Cut the brush and small trees even with the surface of the gronnd, and seed between the stnmps with alsike clover, white clover, and blne grass—two pounds of each per acre. Disk the gronnd or, if the stnmps are too numerous for the disk, use half a spring-tooth harrow and one horse, or a one-horse spring-tooth cultivator. Turn on the stock, and in a few years a splendid pasture will be the result.

"It is best to seed the grass in the early spring. The month of August and the early part of September is the best time to cut brnsh in order to kill it out, though any time will do. Small brush may be cut with a scythe, but anything that would leave stubs to prevent the stock from grazing the ground closely should be cut level with the surface with an ax.

"An acre of good pasture can, in this way, be made to produce 100 pounds of butterfat with a dairy cow dnring the pasturing season, and few or none of the stumps need be removed."

Bumper Bean Crop

A WELD COUNTY, Colorado, bean grower, C. A. Thompson, marketed a $1,290 bean crop in three loads in the fall of 1915. From 15 acres he harvested 562 bushels, which were hauled to market in three loads, making an average of $430 for each load. Mr. Thompson cared for the crop himself, except $40 paid out for hired labor.

Your Questions

Growing Black Locusts

We wish to get a start in black locust trees on our farm near Rochester, Minnesota. We have lots of them growing here in Indiana. Can you tell me how to sprout the seed and grow the trees?
W. J., Indiana.

THE black locnst may do well in the vicinity of Rochester but we doubt it. This tree would be very successful in the Middle West if it were not for the fact that it is attacked by borers, and the trees are pretty apt to be ruined by the time they are ten or fifteen years old. It is quite easy to grow the black locust from seeds or sprouts. Bury the seeds two or three inches deep in the ground out of doors. Leave them there during the winter so they will be frozen. They should be buried in the shade, as on the north side of a building where the ground will not dry up. Plant these seeds in the spring just as you would corn. Where the seeds have not been treated in this manner they may be scalded. Ponr scalding water on the seeds and let them soak in it for twelve hours after it is cool. Do this jnst before planting. Black locust seedlings can be obtained from most nnrseries.

Demand for Sweet Peas

I should like to build up a little business in selling sweet-pea flowers. Can you give me any suggestions?
R. B. C., Meigs County, Ohio.

YOU would probably make pretty slow progress in selling sweet peas without a personal interview with florists. The towns of Athens, Pomeroy, Galliopolis, and Marietta are all within easy shipping distance, and there are numbers of larger cities accessible by parcel post. Whether it wonld pay you to work up a trade in these flowers depends on how extensively you go into the bnsiness. A person with a small by-prodnct of the farm may often secure cnstomers by taking advantage of casnal visits to cities on other business, and thus avoid putting too mnch expense on a small traffic.

Sweet peas are sold at fair prices in most large towns. The local demand should be consulted in the matter of the varieties to be grown.

Keep the Orchard Warm

For a number of years I have had difficulty during the weeks when frost is apt to come unexpectedly in keeping my trees from freezing. I have heard a little about the possibility of having fires in the orchard to raise the temperature.
H. C., Ohio.

SMUDGE pots will protect the fruit trees in the spring. They are used in many parts of the country, including Ohio. There are ten or more different kinds, with varying capacities from one to six gallons. With 50 one-gallon pots on an acre, about 12½ gallons of oil will be burned each hour. If the air is still, the heated area will be five degrees above the air outside. The initial investment for a 10-acre orchard will not be far from $500. The cost of keeping up the fires will be abont $5 an acre each night.

Unless coal can be procured at a very low price, the oil heaters are the most economical.

One Ohio orchardist protected 15 acres of apple, pear, and cherry trees by using four-foot dry oak wood. With three fires to the acre he kept the temperature at 33 degrees inside the orchard while it was 26 degrees ontside. He nsed a little less than one cord of wood to each of the three fires each night.

A Name for the Farm

I am a farmer and reader of your paper. I believe in every farm having a suitable name. Can you send me a list of farm names, so that I may get one that is suitable? J. W. Elliott, Missouri.

AN APPROPRIATE name for the farm is not only of some advertising value, but gives the owner a subtle sort of pleasnre. It is worth careful consideration. The name should not be fantastic, nor should it be too common. Naming the farm is a good deal like naming a child. Once a boy born on the Fourth of July was burdened by his over-patriotic parents with the name of Celebrate Fourth Smith. Neither a boy nor a farm should carry such a load as this. Better name the boy John or Ezra and the farm Fairview or Valleyview. Names which grow ont of the character of the place itself are good if they are original. Coolfont is the name of a farm having numerous cold springs, and is made up of the words cool and font or fountain. Hazelcopse is the appropriate name of a farm which has a beantiful copse or thicket of hazel back of the house. Oakshaw is the appropriate name of a farm which has a grove or "shaw" of oaks. Why not have a christening party? Send out invitations to your friends to come and name the place. Each gnest must suggest a name, and a prize is given to the person offering the best one. The reasons given by the gnests will help make the occasion an enjoyable one, whether any appropriate name is found or not.

Japanese Buckwheat

I have just learned a few facts about Japanese buckwheat, and should like to try some. Will the grain that I get from it be good to feed to a horse or a cow?
C. W., Maine.

JAPANESE buckwheat is valuable as a feed for cows and chickens, but is of little use for the horse. However, some of the buckwheat in connection with oats and corn would answer all right for feeding horses. Bnckwheat is strong in protein.

Wolf-in-the-Tail

Is there a cure for wolf-in-the-tail? The bone in the cow's tail softens, the cow loses in flesh, and her milk supply decreases. The best of feed seems to do no good. *C. E. A., Pennsylvania.*

THE ailment once known as wolf-in-the-tail is now known to be the result either of some disease which causes degeneration in the blood and tissues of the animal and finally affects the bone, or of some deficiency in the food. In some sections of the country the grass and other fodder are deficient in lime and other mineral substances, and so do not provide the animal with the elements necessary to its growth. The disease as here described leads one to snspect tuberculosis. Test all the animals at once. Then if there is no tuberculosis commence a systematic ration for the building up of the animals of the herd.

Good Trade in Lime

I should like advice as to making an income out of limestone on my farm. It is five miles to the nearest railroad station. The nearest lime-produeing plant is eight miles away. If I can produce lime I can sell it all around me. A great deal of lime is used in this vicinity, most of it in the form of burnt lime which has been ground fine so it can be drilled. This lime costs $6 per ton. I should like your advice as to what to do and how to do it. *S. Leiser, Ohio.*

THIS inquirer seems to have an excellent opportunity of bnilding up a good trade in lime. Under such conditions the man who is not experienced in the lime business will be on the safe side if he begins in a small way, with the kind of lime kiln which he can build by using the local labor. The editor of FARM AND FIRESIDE under similar conditions built a stone kiln with an open top and with "eyes" at the bottom, into which wood is shoved and burned by an attendant. This kiln cost abont $150, and will bnrn about 1,000 bushels of lime at a filling. The cost of getting out the limestone and filling the kiln is practically the same as quarrying and moving any other stone, and depends upon the skill of the local laborers and the condition of the quarry. The lump lime from the kiln is worth more per ton than the hydrated lime, which is generally sold to be used in drills. It wonld undonbtedly be best for a man so situated to work np a trade in the lump lime while corresponding with mannfacturers of machinery for the kind of a plant which he feels he wonld like to put np when he learns the bnsiness. The most economical system for him would no donbt be a crusher for the production of raw ground limestone. The experience of the writer is that, with a crusher, limestone can be pulverized for agricnltnral nse for less money than it costs to burn it with wood. Where the commercial agricnltnral lime is sold at $6 per ton, the farmer with a crushing outfit, which he can install for $600, ought to be able to produce ten tons of raw ground limestone per day, worth $3 a ton at the crnsher, if it is sold on a basis of furnishing a value equal to that of the commercial lime. There ought to be a fair profit in this production for him.

E

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Best for windbreaks, hedges and lawn planting. Protect buildings, crops, stock, gardens and orchards. Hill's Evergreens are Nursery grown and hardy everywhere. **From $1 to $10 per hundred.** Hill's Evergreen book and 50 Great Bargain sheet sent free. Write today. World's largest growers. Est. 1855.

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We cut out the Agents and give you **Big Discount** from Agents' Prices. You save almost half the ordinary cost. All our stock, including hedgings, roses, fruit and ornamental trees, shrubs and small fruit trees, is healthy, productive and fully pedigreed. You take no transportation chances, because we guarantee delivery in perfect condition and pay all **freight or express charges to your station.** Not a single dissatisfied customer last year.

This Pear is a Sure Profit-Puller

Known as the Beurre Bosc or Thanksgiving Pear, and proves to be a sure buy. When cold-storaged until the holiday season, this variety frequently sells as high as $8.50 a barrel.

Write today for FREE book that's chock-full of helpful information.

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FACTS ABOUT HARRIS SEEDS

We tell the bad points about a variety as well as the good ones, and we mark the percent that germinates on the label of every lot of seeds we sell so the purchaser can tell just what proportion will come up and therefore how thick to plant. No other seedsmen do this.

Harris Seeds are Sold at Wholesale Prices

We send seeds direct from our farm to yours and so can sell the best seeds at low prices. *Harris Seed Corn* is bred right and cured right. We offer a new big dent variety this year that is a wonder for the North—Bumper crop oats, the biggest oats ever raised in New York State—*Seed Potatoes* raised by the "hill-unit" method of selection yield big crops.

Write for free catalogue and if you raise vegetables for Market ask for Market Gardeners' price list also.

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The Truth About Money-Making Fruit Crops FREE

A BIG, NEW, 4-COLOR BOOK—just off the press—that will interest—enlighten you. *Free* for your name and address on a post card Learn how growers get $12 a barrel for apples—$2.70 a crate for peaches. You need this book—get it *today!*

Stark Bro's
100th-Year Fruit Book FREE Filled with life photos of leading fruits and money-making orchards—*printed in Nature's own beautiful colors.* Each one of its big 72 pages crammed with helpful, money-making facts for both home and commercial orchard owners. Write for it today.

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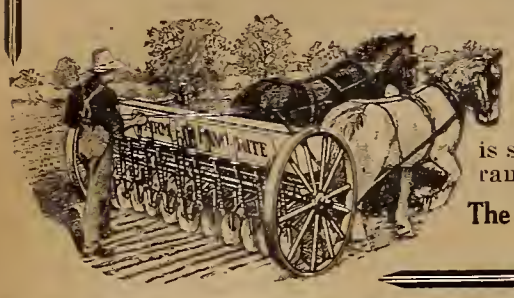
The Greatest Yield from Any Field

Ask any farmer who owns a Farmers' Favorite Grain Drill and he will tell you that it would be impossible for any drill to do better work; that it will sow any seed from grasses and clovers to bush lima beans; that it puts the seed in the ground at an even depth; that the seed is covered right; that it is exceptionally well built, strong, simple, easy on both man and team; that repair cost is small; that it does all claimed for it.

There is Made a Farmers' Favorite Drill for Every Need

Investigate the merits of the Farmers' Favorite Plowfur Single Disc; opens an extra wide seed furrow; scatters the seed evenly the entire width; more plants to the row; less waste space between rows; a better stand and fewer weeds.



Send for the Farmers' Favorite Catalogue. Read it and then go to your local implement dealer and insist on seeing the Farmers' Favorite Drill. Remember that this drill is sold under the strongest possible warranty and must be and do ALL we claim.

The American Seeding-Machine Co., Inc.
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Those disks are of cutlery steel *forged* sharp. They cut deep and they last.

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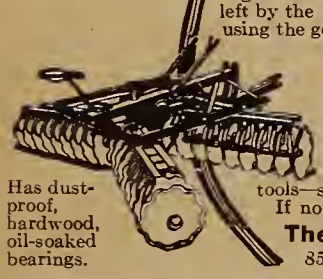
—never mind them. Start your tillage later, too, and avoid early freezes. Select a tractor harrow that will save going over twice. Get a Double Action whose rigid main frame forces the rear disks to cut all the land left by the fore disks. You save power, time and labor by using the genuine

Cutaway
CLARK
Double-Action Engine Disk Harrow



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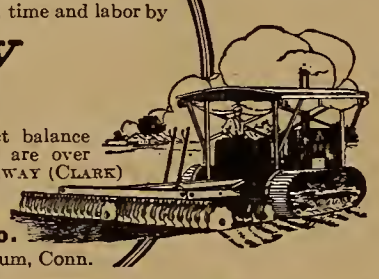

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SET in cellar—connect with big register set in floor of one of main rooms—heats the whole house with forced warm air—easy to set up—no pipes to fit except smoke pipe.

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Write at once for manufacturer's factory price. *We pay freight and ship within 24 hours.* If you prefer a pipe furnace we shall be glad to make up plans *free* and quote prices. Write today and **ask for Furnace Catalog No. 921.**

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300,000 families using Kalamazoo Stoves, Ranges, Gas Stoves, Furnaces, White Enameled Metal Kitchen Kabinets and Tables. 4 catalogs—say which you want.

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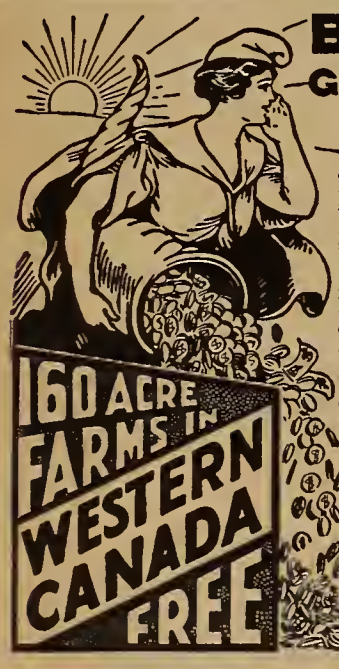

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Good Markets — High Prices

Prizes Awarded to Western Canada for Wheat, Oats, Barley, Alfalfa and Grasses

The winnings of Western Canada at the Soil Products Exposition at Denver were easily made. The list comprised Wheat, Oats, Barley and Grasses, the most important being the prizes for Wheat and Oats and sweep stake on Alfalfa.

No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

Western Canada produced in 1915 one-third as much wheat as all of the United States, or over 300,000,000 bushels.

Canada in proportion to population has a greater exportable surplus of wheat this year than any country in the world, and at present prices you can figure out the revenue for the producer. In Western Canada you will find good markets, splendid schools, exceptional social conditions, perfect climate, and other great attractions. **There is no war tax on land and no conscription.**

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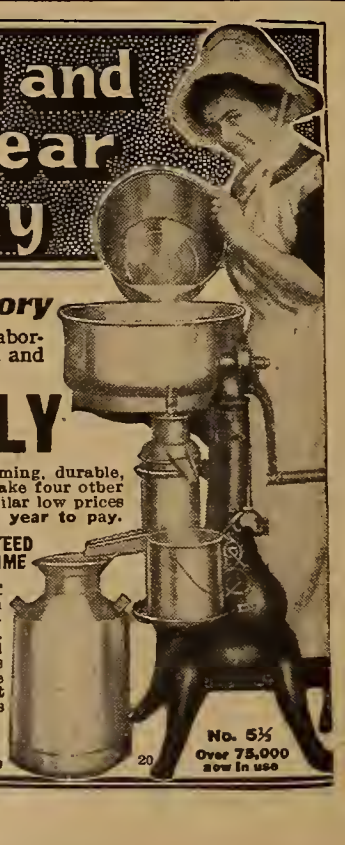

For any Size—Direct from Factory

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

$24 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of **only $2 down and a year to pay.**

Patented One-Piece Aluminum Skimming Device, Rust Proof and Easily Cleaned — Low Down Tank — Oil Bathed Ball Bearings — Easy Turning — Sanitary Frame — Open Milk and Cream Spouts.

30 DAYS' FREE TRIAL GUARANTEED A LIFETIME

You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your $2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

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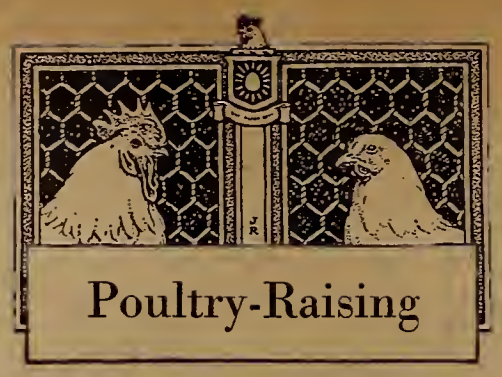

Poultry-Raising

One Hatch Buys Incubator

By J. E. Hufford

BUT few of the smaller poultry raisers and farmers attempt to work for the profit to be had from early broilers. The uncertainty of hen-hatching and hen-brooding keeps most poultrymen out of this profitable field.

On February 10th last year I tried a test case to find out just how I would come out with one loading of my incubator with 150 Buff Orpington eggs which were gathered during the extremely cold weather of the last week of January and the first week of February.

On the tenth day of incubation 42 eggs were tested out as infertile, and on March 3d, 78 vigorous chicks hatched, which was considered a very fair hatch for the season of the year and from eggs that were gathered during such cold weather.

The chicks when twenty-four hours old were placed in a reliable brooder, in which they were brooded until six weeks old, when they were transferred to a small brooder house.

Sixty-seven of these chicks were raised to broiler size, and on May 20th, when the chicks were eleven weeks old, 62 of them were sold on the market as broilers for 30 cents a pound. The following figures show the total cost of raising the chicks to time of sale, and also the receipts from the sale:

150 eggs at cost	$4.50
Cost of incubator	16.50
Feed for chicks	14.90
Straw for bedding	.40
Oil for incubator and brooder	.45
Total	$36.75

62 chicks sold, 139 lb @ 30c, $41.70.

This left me a profit of $4.95 and five chickens on hand.

I find that I can count on my chicks weighing 1½ to 2 pounds when eleven to twelve weeks old, and if I have them ready during the months of April and May they will bring 30 cents a pound as broilers.

This plan enables me to make sure of early pullets for breeders, and I can make a profit I would not otherwise get with the later hatches that I use for winter layers.

Another important advantage I get from the use of incubators and brooders is the lessening of the work and worry of raising chickens, since I get the chicks in large numbers of the same size, which makes the raising of them much easier.

One other advantage in the use of incubators and brooders realized by many who operate on a small scale is the elimination of the lice problem when artificial hatching and brooding is substituted for hen-hatching and hen-brooding.

I find that it does not make any great difference what particular plan of feeding is followed so that pains are taken to keep the brooder perfectly clean, and later the roosting places.

Eggs Carry White Diarrhea

By Leslie E. Card

BACTERIA that cause white diarrhea in poultry are carried from one generation to the next, according to experiments performed at the Connecticut Experiment Station. A hen affected with

The ovaries of a healthy, normal hen

white diarrhea will lay eggs affected with the disease. The ovaries of the hens hatched from these eggs may be affected with the bacteria of the disease.

Even though the stronger and more vigorous pullets, and the cockerels, survive the disease and show no outward sign of it, they carry the bacteria and will produce the disease.

Some of the pullets hatched from eggs from diseased hens proved to be good layers. After a short time most of them fell off in egg production. Later they would lay an egg or two a week. When their ovaries had become more diseased the hens would cease laying.

If the ovaries of a hen become much affected by the disease, generally the hen appears out of condition. Occasionally a hen with the disease appears to be healthy after she has stopped laying. A hen in the last non-laying stage of the disease is called a "carrier" hen.

The carrier hens in the Connecticut experiment were kept under examination for from several months to a year or more before they were killed. Post-mortem examinations were made of the internal conditions of the diseased hens.

The importance of making certain that the eggs used for hatching come from flocks free from this dangerous disease is shown by the experiments.

Feeding plenty of fresh sour milk to the chicks affected with white diarrhea disease germs, from the time they are hatched until well grown, will save a large proportion of the chicks. The pullets, though, will carry the infection to the next generation through their eggs.

White diarrhea has affected these ovaries

Poultry-Fertilizer Values

IF SIXTY pounds of poultry manure is annually collected from the dropping board for each fowl kept, and with this manure 20 pounds of dry loam are mixed, and 32 pounds of acid phosphate and 16 pounds of kainit, we have a fertilizer mixture that is worth at usual market prices—not wartime prices—about $10 a ton in an air-dry condition. This mixture will analyze about half as rich in plant food as the ready-mixed commercial fertilizer for which we pay about $25 a ton.

Stated differently, the manure collected from each 20 fowls for a year is worth from $6 to $7, and the manure in the litter and left on the range, if it can be utilized, is worth about as much more.

My Guineas a Delight

By C. C. Bly

SINCE removing from the city to our country home, we have raised a flock of guineas for three successive summers, and they have been a delight to us in more ways than one.

These savory little game birds furnish the table when chicken begins to grow wearisome and fresh pork is not in season from the farm.

I find the raising of 100 guineas not at all difficult, and the guinea babies have a charm and beauty not found in other chicks.

There is usually little success achieved by trying to bring guineas up with their own mothers. The guinea hen is too Spartan a parent, and drags her exquisite little folk about through grass too damp for their constitutions to withstand. So place the eggs under motherly old hens, but be prepared to lose some chicks. Not all will escape the foster mother's huge, crushing feet.

The sooner you get them on the ground the better, for the guinea fowl is a semi-wild creature and thrives only when in contact with the earth. Have a good-sized run carefully wire-enclosed in front of your coop, and move it to fresh grassy, sunny places every day. Ordinary-sized poultry wire will not do, as the chicks can escape through incredibly small cracks, and will immediately "freeze" under some leaf where you cannot find them. I have the best success by giving them their freedom after the tenth day when the dew is dried off in the morning.

Small seeds, such as millet, are almost a necessity during their early life, and the tiny-stomached creatures must be fed often until they get their grip upon life, which is a firm one when they once get

Just One Gallon of Oil

X-Ray completely hatches on one gallon of oil—just one filling. Fill the X-Ray tank with one gallon, light the lamp and you are through filling lamps. No cold corners, no overheated sides—X-Ray automatic trip regulates the flame.

X-Ray Incubators and Brooders

Lamp is directly underneath—heat carried by X-Ray Duplex Heater to all corners. Perfect hatches, vigorous chicks the result. X-Ray perfectly level egg tray; X-Ray automatic trip (heat regulator) and X-Ray hinged glass paneled top are a few of the X-Ray Fifteen Special Features.

Express Prepaid

We prepay express to practically all points—don't be delayed by slow freight. Free book No. 52 of inestimable value to poultry raisers—tells all about X-Ray Incubators and Brooders. Send for it.

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Dept. 52, Des Moines, Iowa

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Our new book for 1916 tells about our leading varieties of land & water fowls, also incubators, brooders & squabs. High quality at low prices. 31st year. 96 page catalog FREE. H. M. JONES CO., Box 54, Des Moines, Ia.

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farm-raised Land and Water-Fowls. Eggs in season. Illus. Catalogue, and "Grower's Guide," 2c. An honest deal. Write today. HENRY PFILE, Farmer-Poultryman, Box 627, Freeport, Ill.

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Finest illustrated duck book published. Tells how to hatch and care for greatest egg producing fowl on earth. How to got a start. Quotes low prices on stock and eggs of finest strains. Sent for 5 cents postage. Address BERRY'S FARM, BOX 143, CLARINDA, IOWA

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—all about Raising Chickens, Care, Feeding, etc. Contains Beautiful Colored Pictures of Best-Paying Varieties and Best Layers—sent **FREE**
EGGS & POULTRY for Hatching at Special Low Prices
J. W. MILLER CO., Box 27, Rockford, Ill.

The NEW **40c. Gem Hatcheries**
AND BROODERS are a grand success. *Over 300,000 in use.* This lady raised 1,926 chicks with them in 1915. Send 6tamp for catalog. F. GRUNDY, POULTRY EXPERT. Morrisonville, Illinois.

POULTRY PAPER 44-124 PAGE periodical, up-to-date; tells all you want to know about care and management of poultry for pleasure or profit. Four months for 10 cents.
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by recognized authority--tells how to avoid costly errors--get 100 per cent. hatches--highest market prices. Save money on guaranteed incubators and brooders--get rock-bottom prices. Book in big demand--write today--it's free.
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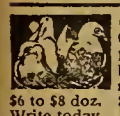

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ROUP starts as a cold in the head, caused by a damp poultry house or by great changes in temperature between day and night. The symptoms are watery eyes and nostrils, dirty beak, coughing or wheezing, slimy deposit under the wing. Often accompanied by "canker" in mouth and throat—similar to croup or diphtheria. The outcome is death from starvation or strangulation. The remedy is easy and very certain—Germozone. Generally a little in the drink suffices in early stages. Later, individual treatment may be necessary, but Germozone is easy to use, quickly effective, no long "doctoring." Sold by one dealer at most every town. Liquid form, 12 oz., 50c.; 32 oz., $1.00. Tablet form, one size only, 50c. postpaid.
GEO. H. LEE CO., 214 Lee Bldg., Omaha, Neb.

Get our big new 1916 Combination Offers on *Progressive Incubators* and *Brooders.* Wonderful bargains—built from best materials with latest improvements. Only machine with *hundreds of dead air cells* to protect eggs against sudden changes.

TAKES GUESSWORK OUT OF HATCHING

Many users report a chick from every hatchable egg. Easy to run. Built of genuine California Redwood; Copper Hot Water Heater; Double-disc Regulator; Double Doors; Safety Lamp; Tester, etc.

$7.85 LOWEST PRICE YET FOR BIG 155 EGG INCUBATOR

No extras. Incubator and Brooder both $9.85. Freight paid east of Rockies. Money back with 8% interest if machine doesn't make good. Order from this ad or get Special 1916 Combination Offer and Free Poultry Book showing why the Progressives heat them all for results.

Progressive Incubator Co.
Box 142 Racine, Wisconsin

E

Egg Money in Milk

A LIFELONG and successful poultry keeper, Miller Purvis, gives in "Poultry Life" this bit of personal milk-feeding experience with a flock of 30 Barred Rock hens which have been bred to lay:

"This pen began laying last November, and laid very well right through the entire winter. When we began feeding skim milk regularly we were getting an average of about 18 eggs a day from 30 hens. One hen went broody about this time, and was allowed to sit. She hatched her chicks March 14th, and she and the chicks had milk all the time, as much as they would consume.

"This hen began laying again April 14th, and in the next sixty-one days laid 58 eggs, when she went broody again. She was promptly shut up to break her of her broodiness. In just fourteen days she was laying again, and is now laying as regularly as ever.

"Of the other 29 no strict record was kept, but we frequently got 24 eggs a day, and 14 was about the low limit in two months.

"Another pen of the same breed which got milk only when there was some left have not laid as many eggs, nor are they in as good condition now."

County Sells Quality Eggs

By O. L. Geyer

FLOCKS of fifty layers on general-purpose farms are not expected to bring in a large income, but by using team work in selling, a score of such farm flocks in Black Hawk County, Iowa, added $300 net profit to the egg income received during the first eight months of 1915.

The selling was done through the Orange Co-operative Egg-Marketing Association, which association procured a four-cent premium for the ten thousand dozen eggs sold during the eight months.

This association was organized late in 1914. Ten farmers who had some interest in selling eggs formed the association and agreed to furnish strictly fresh eggs, and make weekly deliveries, except during the hot weather, when semiweekly visits were promised.

Another requirement agreed to was the sorting out of all poor-shaped and small eggs before packing them.

Arrangements were made with two local grocers to pay four cents above the market price on the day the deliveries were made.

To guard against the eggs' getting below standard grade, each member was required to stamp his initial letter on the shell of each egg and pack and seal his cartons with his initials.

The secretary of the association investigates any complaint that may come from consumers, but only five complaints were received during the hot months, when danger to eggs was greatest.

The guaranteed eggs proved somewhat of a drug on the market at first, and when the spring season arrived one of the grocers decided he could not afford to pay the premium demanded by the association. The other grocer lost money for a time, but in the end the demand for guaranteed eggs became so heavy that he could not get the eggs fast enough.

W. H. Moust is the secretary of the association, and most of the work connected with it is taken care of by him. The association market is fixed by the five directors, and the members must deliver their eggs to whatever markets are arranged, with the penalty of expulsion for failure to follow the order.

Ice Water And Corn Won't Make Winter Eggs

BUT Red Comb Meat Mash proves its title, "The Great Egg Maker," wherever it is used. And it costs you less than you could buy the materials for and mix them yourself. Sell your grain—buy Red Comb. Farmers and poultry keepers are making a fine profit from their flocks *right now*. You can too. One farm woman writes that her hens paid a nearly profit of $3.06 each. Another that her hens lay all winter long. *Hens conditioned on Red Comb took the special international prize for cold weather laying.* Join the profit makers. There is a Red Comb feed for every poultry purpose. Not excelled as a conditioner of market birds and show birds. Ask your Red Comb Dealer. Write for valuable free book "Feeding Poultry for Profit." Written by six great poultry experts. Postal brings it.

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Our big, illustrated, 1916 Year-Book—"Profits in Poultry Keeping"—will help you *make more money* with fowls. Tells how to raise chicks, get more eggs and make larger profits *with less work.* Learn about

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LOST Only 1 CHICK Out of 272

"I lost but one chick in 6 weeks, 272 in the flock, with my Candee Colony Brooder. I never ran a brooder of any kind before. Some of my chicks weigh over one pound."
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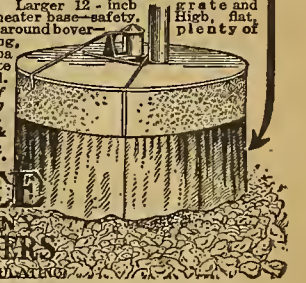
Broods up to 500 chicks in one flock and burns coal—economical. Coal magazine feeds fire, and heater is self-regulating—labor-saving. Larger 12-inch grate and sealed heater base—safety. High, flat, big, all-around brooder—plenty of fresh air for chicks. Long, all-wool curtain—stops draughts, insures accurate regulation and saves fuel.

Write today for copy of Colony Brooder Catalog and raise more chicks.
CANDEE INCUBATOR & BROODER CO., Dept. H, Eastwood, N. Y.



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If Ordered Together. Freight paid east of Rockies. Hot water copper tanks, double walls, dead air space, double glass doors, all set up complete, or
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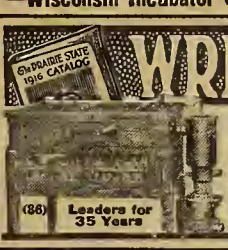

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Learns About Sheep

Little Joe Asks His Papa a Lot of Questions

By JOHN Y. BEATTY

"OH, DADDY," piped little Joe, "see that sheep there with its eyes all covered up. Is he playing Blind Man's Buff?"

"No, my son," explained Daddy, "that is wool over the sheep's eyes, and it is always just that way. He isn't playing Blind Man's Buff."

"Well, Daddy, how can the sheep see to eat and walk if its eyes are always covered up with that pretty wool?"

"Oh, the sheep can see all right, Joe. He is used to having that wool hang down over his eyes, and his eyes are so sharp that he can see between the folds. That long wool is a characteristic of the breed."

"What is a characteristic, Daddy?"

"A characteristic is something that is the same in all the animals of the breed. This long wool and the wool over the eyes are both characteristic of the Cotswold. That is the name of this breed.

"You know, Joe, there are two distinct kinds of sheep. One kind is kept mostly for meat. The other type is for the production of wool. Of course, all sheep produce wool, and all sheep produce meat, but those sheep with the long fine wool are more profitable for their wool. And those with the coarser wool but the plump bodies are better meat producers.

"Most of our sheep originated in England. Some of the breeders in England kept sheep that had the longest and finest wool, and others kept only those with bodies made in the best form for mutton production. Many years of selection in this way have developed the many different breeds, each with its characteristics."

"Daddy, this Cotswold sheep hasn't any wool on his legs below his knees. Why didn't they make a sheep with wool there too?"

"Well, I suppose the principal reason is that if there were wool there it would be impossible to keep it clean. You know, if you let the sheep get into all kinds of dirt, and walk in a muddy field, the wool on the legs would get dirty. If that were mixed with the clean wool when it is sold the buyer would not pay so much for it.

"That is the reason why we always cut off the sheep's tails. If the tails were left on they would not only get dirty from the droppings, but when the sheep switched its tail the dirt would be transferred to the wool on the sides, and so the price of the fleece would be greatly reduced."

"Well, Daddy, do they really chop off the sheep's tails?"

"Yes, that seems to be the only way to avoid the loss from dirty wool."

Sheep's Tail Really Useless

"Well, when these men were saving the sheep they liked best, why didn't they save some without any tails so we wouldn't have to cut them off? I should think that would be a much more sensible characteristic than to have wool over their eyes."

"I don't know but that you are right, my son, but I have never heard of a sheep's being born without a tail. No doubt, if all the men who are breeding sheep should select those with the shortest tails, the tails would be shortened to a better length in the course of a great many years."

"This little sheep has wool all around his eyes too, but it isn't so long. What breed is it?"

"That is a Shropshire, Joe. The Shropshire is one of the mutton breeds, and the wool is shorter and not so fine. The Shropshire is one of the most popular breeds in America. We are more interested in the production of food here than in the production of wool for clothing, though I am sure I don't know why we should be. They seem to give more attention to the wool in England than we do. In Australia, which is largely settled by Englishmen, the finest wool in the world is produced."

Long wool hanging over the eyes is characteristic of the Cotswold

"What breed produces the finest wool, Daddy?"

"The Merinos. I don't see any here. We don't have so many in America. There are several different strains or breeds of Merinos, but they all produce exceptionally fine wool, and lots of it. In addition to growing wool all over their bodies, these sheep have their skin all wrinkled up so there is that much more surface on which to grow wool. And the finest wool grows on these wrinkles. If you were to remove one of their hides and stretch it out you would find that it is almost half again as large as the sheep's body. This is a characteristic that men have developed in the Merino breeds after many years' work."

BOYS and girls are interested in the animals of the farm. This interest will be increased a lot if they know the points of merit that go to make a good horse, cow, hog, sheep, or hen. This article about sheep is the first of a series for boys and girls about live stock. Other articles of the series will be printed soon.

"A sheep hasn't got much neck, has it Daddy?"

"No, Joe, the meat of the neck is not very valuable, so men have selected sheep with the most meat in other parts."

"Which is the best part for meat?"

"The leg of mutton brings the most, and is considered the choicest cut of a sheep. It is the hind leg and runs up from the flank and just under the rump."

"Isn't the front leg a leg of mutton too?"

"No, the front leg is sold as shoulder, and brings quite a little less than the leg of mutton. The brisket is that part that is in front of the sheep and under its neck. It is cheap meat. The meat along the back is good, but less valuable than the leg. The ribs and the belly are both sold as the cheaper cuts. They have lots of waste in them."

"Can you tell how old a sheep is by looking at his teeth like you do when you tell how old a horse is, Daddy?"

"Yes, only it is much easier to tell a sheep's age, for it has fewer teeth. You can tell the age up to three years, and beyond that it is more difficult.

"When the sheep is born, or within a month afterwards, it has eight teeth, all in the lower jaw in front of the mouth. These teeth are known as milk teeth, and are much smaller than the ones the sheep has when it is older. After a year the two center milk teeth drop out, and are replaced by two permanent teeth.

"When you open a sheep's mouth and find the center pair of teeth much wider than all the rest, you can decide that the sheep is one year old.

"If the two center pairs of teeth are wider than the rest, the sheep is two years old. You need not worry about being able to tell when they are wider, because the difference is very marked, and you can scarcely mistake.

"When the sheep is about two and one-half years old the third pair of milk teeth are replaced by the permanent teeth, and only one pair of milk teeth remain. This pair is replaced by permanent teeth soon after the sheep is three years old. Then the sheep is said to have a full mouth.

Good Teeth Wear Down Slowly

"After the sheep has used these permanent teeth for a while they begin to wear off and grow shorter. The amount of their wear depends upon the kind of food they receive, and also upon the quality of the teeth themselves.

"Sometimes a sheep will have teeth of poor quality, and they will wear back much more rapidly than those of another sheep. For this reason it is almost impossible to tell the age of a sheep after it has a full mouth. Some men who have raised sheep all their lives, and who have examined the mouths of several thousand sheep, assert that they can tell the age of a sheep at any time during its life, but this is not common. There are molar teeth too, but they are of little help in telling a sheep's age."

"Daddy, does a sheep chew a cud like a cow?"

"Yes, my son, the sheep has four stomachs, like a cow, and chews a cud."

"But why does it have so many stomachs?"

"Each one of the stomachs of the sheep has a definite part in the digestion. When the sheep eats grass or grain the food goes at once into the first stomach without being chewed, or, at least, not chewed much. Then after the sheep has filled its first stomach it goes and lies down and chews its cud.

"The food it has taken into the first stomach was mixed with saliva, the juice that is in the mouth when it is eating.

"When the sheep lies down, this softened food comes back into its mouth in small quantities which we call cuds. The sheep then chews these, using the grinder teeth that are in the back part of the jaw.

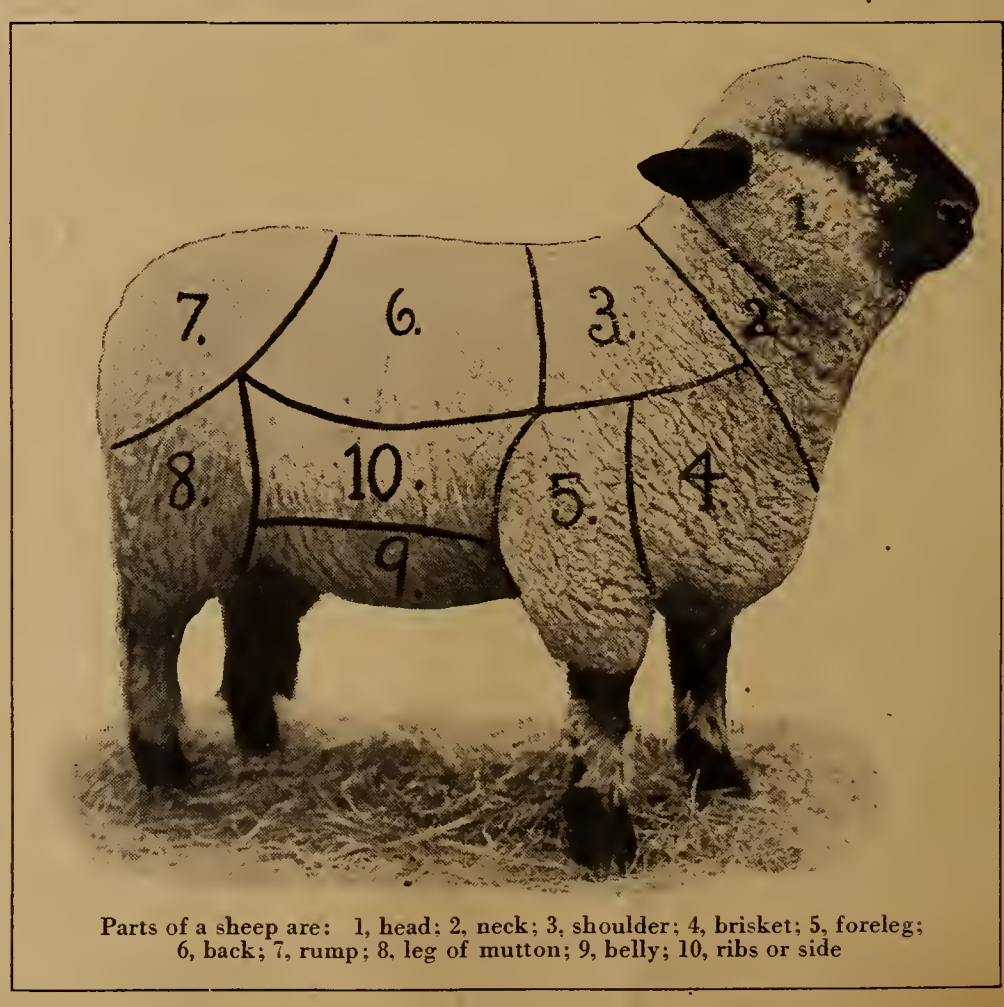
"After the cud is chewed, the food passes into the second stomach, where it starts to digest.

"In the third stomach more changes take place, and when the food passes into the fourth stomach it is very fine and mixed with liquid. In the fourth stomach more liquids are added. Then after much swashing back and forth in the liquids the extremely fine particles are taken into the blood vessels that surround this fourth stomach, and the blood takes them to the different parts of the body."

"Oh, is that what the blood is for?"

"Yes, the blood is the carrier of food. It distributes it to all the body and to the wool."

E



Parts of a sheep are: 1, head; 2, neck; 3, shoulder; 4, brisket; 5, foreleg; 6, back; 7, rump; 8, leg of mutton; 9, belly; 10, ribs or side

Buy Pure Food

How to Know What You Get

By Harriet MacMurphy

EVEN though it looks appetizing and tastes delicious, food is not worth the work of preparation unless it is the kind our bodies can change into energy.

Every housekeeper should know whether she is providing bone, muscle, blood, and brain building nutrients or only the pleasant flavors of adulterated foods.

There are three kinds of adulteration: First, the mixture of the food with cheaper but not injurious articles; second, the use of substances that injure food qualities, to improve the color and appearance; third, the removal of valuable or necessary ingredients.

The purity of baking powder, ketchup, vinegar, flour, and canned goods is difficult for anyone but a trained chemist to determine. The safest way to buy such articles is to get standard brands, advertised in periodicals that accept only first-class advertisements.

While spices are generally adulterated with starchy substances, and the starch can be detected by adding a drop or two of tincture of iodine to a water solution of them, it is best to buy standard brands. The starch test can be used with cloves, mustard, and cayenne.

Tea May be Colored

The strongest and best-enforced food law in the United States is probably the law to prevent the importation of adulterated teas. But it has only very recently succeeded in forbidding coloring in teas.

To detect this coloring, Dr. Reed, a chemist and a woman, has thought out this method, simple enough for any housewife, accurate for the chemist: Put a teaspoonful of tea in a sieve, shake over a piece of white unglazed paper, crushing a little if tightly rolled. Then crush the sifted dust on the paper with a spatula or a caseknife, drawing it along on the paper.

If colored, streaks of various colors will be mingled with the uniform color of the tea dust. If a black stripe appears it may be carbon; more surely so if glossy. Blue may be Prussian blue, indigo, or utramarine. The first will turn brown when a drop of caustic soda touches it, and the ultramarine loses its color when mingled with an acid. A yellow streak may be tumeric, which will turn bright red in uniting with a drop of sulphuric acid. If the tea is coated with soapstone and gypsum, use black paper instead of white, and look for white streaks.

A simple magnifying glass will make these steaks plain. Caustic soda and sulphuric acid can be obtained of the druggist, but must be carefully put away, as they are poison.

Coffee is adulterated by adding chicory, various cereals, peas, and beans. In coarsely ground samples the coffee will have a dull surface, while chicory is darker and gummy-looking, and the beans and peas have a polished surface. A magnifying glass will make these differences plainer. For further test put a level teaspoonful in a small bottle of water, shake, let stand a moment: most of the coffee particles, being oily, will float; unless very fine, the substitutes will sink to the bottom.

Test Out the Coffee

Coffee substitutes, so-called, are sometimes adulterated with coffee to give it a flavor that will make it sell better. Most of these substitutes, being cereals, are starchy and will sink in water; coffee will float, so you can find out if your coffee substitute is pure by the same process reversed that tells you if your coffee is pure, for the same things that are used to adulterate coffee are used to make coffee substitutes. These are all good enongh when rightly named, but bad when used to adulterate and when their presence is concealed if possible.

Put a half teaspoonful of the substance supposed to be adulterated with starch in half a cupful of boiling water and boil two minutes more. Cool, and if too dark a color dilute until the starch color may be distinguished. This will probably require an equal volume of water. A single drop of tincture of iodine should be added. If starch is present a deep blue appears. If only a small amount of starch is present, another drop or two may be needed to bring out the color.

When eating at hotels and restaurants avoid fancy dishes, stews, hashes, salads, and the like, unless you know the kitchen to be run in a clean manner. Otherwise you may get the remains of someone else's meal.

Steaks, baked vegetables, whole fruit, boiled eggs, and other foods that are served in nearly the form that occurs in nature, are most likely to be pure.

PRESSED HARD

Coffee's Weight on Old Age.

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"Some time ago I was making a visit to a distant part of the country and took dinner with one of the merchants of the place. I noticed a somewhat unusual flavour of the 'coffee' and asked him concerning it. He replied that it was Postum.

"I was so pleased with it that I bought a package to carry home with me, and had wife prepare some for the next meal. The whole family liked it so well that we discontinued coffee and used Postum entirely.

"I had been very anxious concerning my mother's condition, but we noticed that after using Postum for a short time she felt much better, had little trouble with her heart, and no sick stomach; that the headaches were not so frequent, and her general condition much improved. This continued until she was well and hearty.

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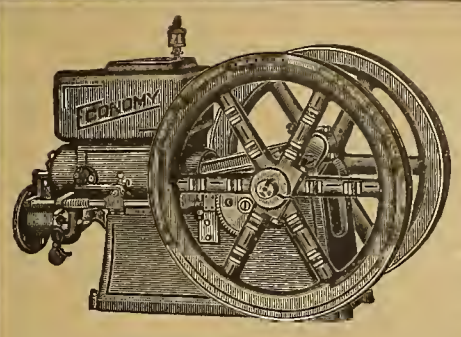

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3 packages Ever-Ready Tapioca, 1 lb.		.45
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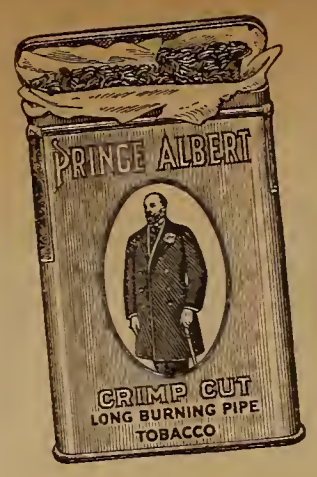
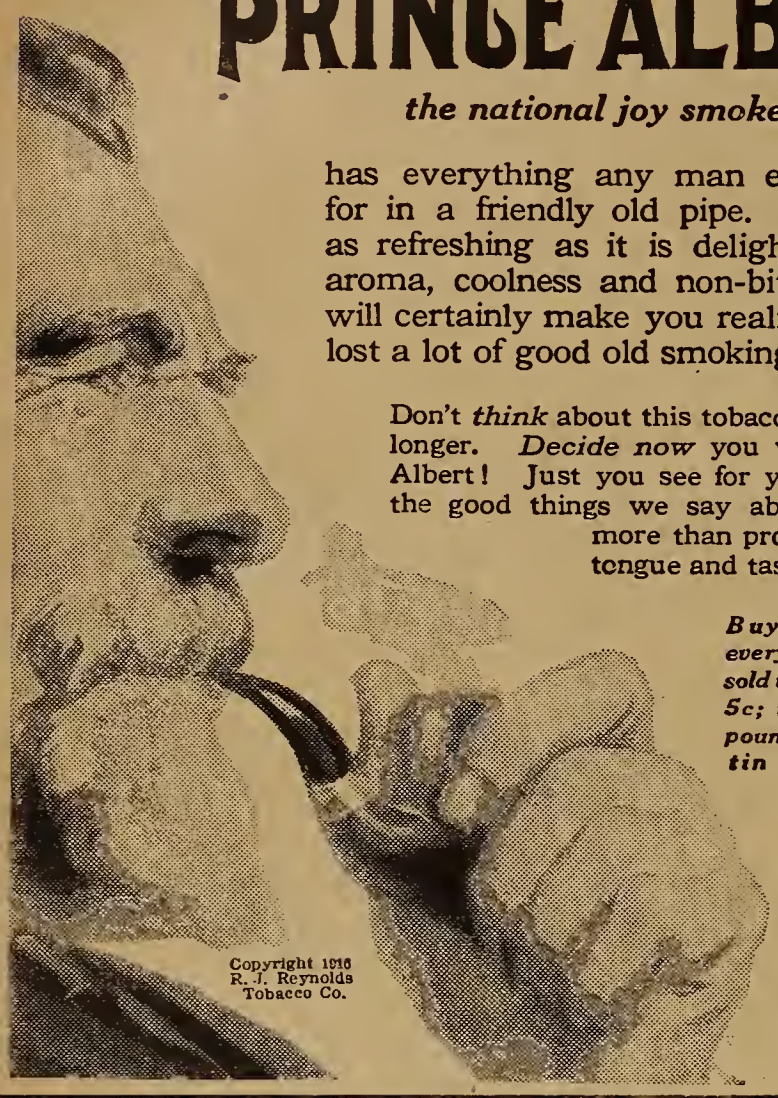
(426)

Prince Albert paves the way



for men to get a new and cheerful understanding of how good a pipe can be. If you *think* you can't smoke a pipe, or if you are taste-tired, we tell you Prince Albert will bring you back without any fuss or feathers—quick! The patented process fixes that—and cuts out bite and parch!



PRINCE ALBERT

the national joy smoke

has everything any man ever yearned for in a friendly old pipe. Its flavor is as refreshing as it is delightful; and its aroma, coolness and non-biting qualities will certainly make you realize you have lost a lot of good old smoking time!

Don't *think* about this tobacco question any longer. *Decide now* you will try Prince Albert! Just you see for yourself that all the good things we say about P. A. will more than prove out to your tongue and taste!

Buy Prince Albert everywhere tobacco is sold in toppy red bags, 5c; tidy red tins, 10c; pound and half-pound tin humidors and in that classy pound crystal-glass humidor with sponge-moistener top that keeps the tobacco in such fine trim.

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R. J. REYNOLDS TOBACCO CO.
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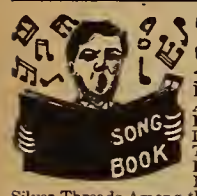

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LOVE, WAR, SENTIMENTAL

I Didn't Raise My Boy to Be a Soldier—There's a Girl in the Heart of Mary—Down Among the Sheltering Palms
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It's a Long, Long Way to Tipperary—Sailing Down the Chesapeake Bay—When You Wore a Tulip and I Wore a Big Red Rose
Don't Take My Darling Boy Away—When It's Apple Blossom Time in Normandy—If I Had a Home Sweet Home
They All Sang "Annie Laurie"—When I Was a Dreamer
I'll Return Mother Darling to You—There's a Mother Old and Gray Who Needs Me—Where the River Shannon Flows
I'm on My Way to Dublin Bay—I Love the Whole United States
Silver Threads Among the Gold—When Maple Leaves Were Falling—When I Dream of Old Erin—Till Sands of Desert Grow Cold
Life—Little Lost Sister—California and You—Sing Me the Rosary—When I Lost You—Chinatown, My Chinatown—I Want a Little Bungalow—Roll Along, Harvest Moon—Casey Jones—Silver Bell—and 260 other **BIG HITS**, and **PIANO MUSIC**. **ALL for 10 CENTS**—3 for 20c. Address **HOME MUSIC CO., 29 S. CLINTON ST., CHICAGO.**

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You may have your choice of either of the below periodicals in connection with a year's subscription to *Farm and Fireside* under conditions which will enable you to save money on your magazine investment. This arrangement is for a limited time only and we urge you to send in your order because the offers may be withdrawn at any time.

PEOPLE'S HOME JOURNAL is a story magazine made for every member of the home. It is full of stories, every one of which comes up to the high standard which the People's Home Journal set for itself years ago. Every story is full of human interest—love stories, stories of romance, stories of adventure, stories for big folk, stories to laugh at and stories to cry over. The magazine is splendidly illustrated.

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Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

Dry Climate Needed

I WANT to ask your advice concerning my health. I am troubled with chronic nasal catarrh and nothing seems to help me. Some years ago I noticed that I had to spit too much, so I went to a doctor and he pronounced it a cold. Later on a doctor told me that I had catarrh, accompanied by laryngitis and pharyngitis, and that it had become chronic. I have to spit a great quantity of watery, slimy stuff that comes from my nose. The back part of my tongue is coated and I have a poor appetite.

Is the catarrh the cause of my poor appetite? I have no other trouble with my stomach or any indigestion.

Do you think I should go to a dry climate? I live close to Lake Michigan.

What States in the United States have a dry climate? And where would be the best place to go? I would like to go to some place where I could make a decent living farming. Do not want to go to a desert.

Would Arkansas be a good place to go? Or what State would?

Do all States have immigration bureaus, and are they always located in the capital? O. J., Wisconsin.

Answer: I know of no remedy or catarrh cure that would more than alleviate your trouble. Would advise you to leave the harsh, damp winds of Lake Michigan before your disease extends to your lungs.

Arizona, New Mexico, southern California, Texas, and western Kansas have dry climates, but you might do as well in the warm, moist atmosphere of North Carolina, Georgia, or Florida. Probably Arkansas would be a good place to go, better than Wisconsin, at least.

You ask whether the catarrhal condition is the cause of your poor appetite. It certainly is. This sticky discharge tends to sicken you and destroy your appetite.

You ask about state immigration bureaus. If you wish to get information about a good place to settle, pick out a town and write to the secretary of the commercial club, or address the state commissioner of agriculture.

Eczema Again

Mrs. M. R., Oklahoma, writes: "For many years I have suffered from eczema. At present I am confined to my room with it. The medicine my doctor gives me seems only to make matters worse. Is it a skin or a blood disease? And is there a cure for it?"

THERE are at least nine different varieties of eczema described in medical books. It is described under diseases of the skin, but in order to effect a cure it is necessary to treat the constitutional disease that is the cause of it.

You failed to state the kind or location of the disease. Use ichthyolis, 1 dram; Ung. zinci oxidi, 1 ounce. Mix and apply three times daily. Mutton tallow is very soothing also. See answer to others.

Household Remedies

I. M. O. writes a letter recommending for vomiting a tea made from the limbs or leaves, in season, of the peach tree. He also sends a recipe consisting of one ounce of oil of cajupnt and four ounces of oil of hemlock mixed together, to be applied to the throat for sore throat. This is not to be taken internally.

Fermentive Dyspepsia

Mr. H. Gaskin, a West Virginia undertaker, says: "My trouble is first noticed when I take a light belch with some odor, and this increases until my stomach and bowels are distended at a terrible rate, accompanied with belching and sour eructations and terrible burning. This lasts perhaps twelve hours, and goes off with diarrhea."

THOSE sour eructations indicate that your liver is at fault. You should take three one-tenth grain tablets of calomel every hour until fifteen are taken. Then take a teaspoonful of soda phosphate in a glass of water before each meal. Repeat the calomel tablets every other or every third day until they produce bilious stools. Report progress.

So I Can Reply Promptly

WHEN you write to me about your ailments, or those of your relatives or friends, please write on only one side of the paper, and make your descriptions of symptoms as brief as you can. If you want a personal reply, kindly enclose a stamped envelope. DR. SPAHR.

We Can't Do It

A subscriber from Clearfield, Pennsylvania, wants us to recommend somebody's patent cure for St. Vitus' Dance, as he had good results from its use in a couple of cases. However, he does not want his name or initials used in recommending it. We cannot advocate any patent, three-dollars-a-bottle nostrum. We have no sympathy with the patent-medicine business. We will not recomend any medicine that we do not know the ingredients of, and the exact quantity of each, and their probable or remote effect. Besides, two cases are no criterion. Medical statistics include thousands of cases, giving not only the good but the bad effects of each ingredient. The natural course of the disease is limited anyhow, and the medicine may have been given just as the disease was taking a favorable turn.

Liver Spots

Mrs. D. K. of Vermont writes: "About five years ago, a brown spot appeared on my nose. It has increased in size, and is now nearly or quite the size of a five-cent piece. Some call it a liver spot. What can I do that is safe to remove it; and if that is impossible, how can I disguise it?"

CHLOASMA is usually secondary to intestinal or uterine diseases or malaria or Addison's disease, or other constitutional diseases. The treatment is to cure the disease and thus remove the cause. This can be done. It would be well for you to consult your family physician.

Perspiring Feet

Mrs. E. V. S. of Albion, Michigan, writes that her boy, aged fifteen, who had been troubled with perspiring and bad-smelling feet, was told by a physician not to wash his feet but to wipe them dry with a clean, dry cloth and wear white-footed socks exclusively. This simple expedient soon effected a cure, but he continues to wear them for fear of recurrence. This is a common-sense idea worth a trial. I am confident that if people would all wear white hose they would be saved much suffering with their feet.

"Bees Cured Me"

In our paper I find this question: "Did you ever hear of the bee-sting cure for rheumatism? And did you ever know of anybody's being cured by it?" To which I wish to answer, yes. I tried it myself. Six bee stings applied, at once cured the awful pain, and it has not returned, and I know of another person who was cured. Just let the bees sting where the pain is, and I think it's a sure cure. I have told people of it, but they seem to think the pain of the stings would be terrible. If one has rheumatism as I had it they would not mind the stings.

MRS. EMMA A. EVERY, Michigan.

Stiffness of Legs

Mrs. C. J. Stebbins, Michigan, says that she is a married woman, fifty years old, in good health, weighs 200 pounds, can eat anything that is raised on the farm, but about four hours after eating her stomach begins to hurt. She also complains of stiffness of the limbs after sitting down. It seems to be from the hips to the knees. She has found nothing to do it any good. Her heart bothers her so that she cannot sleep at night.

ANOTHER case, it seems, of torpid liver, constipated bowels, and overwork. You need a complete rest and, better still, an entire change of scene and surroundings. The stiffness in your legs may be caused by carrying so much weight. Your tired heart needs a rest also. If you can't do any better, stay in bed for a month and just rest. That will do you a world of good.

E

OUR FAMOUS FLOWER OFFERS ARE READY

BEAUTIFUL ROSES

And Other Fragrant Flowers

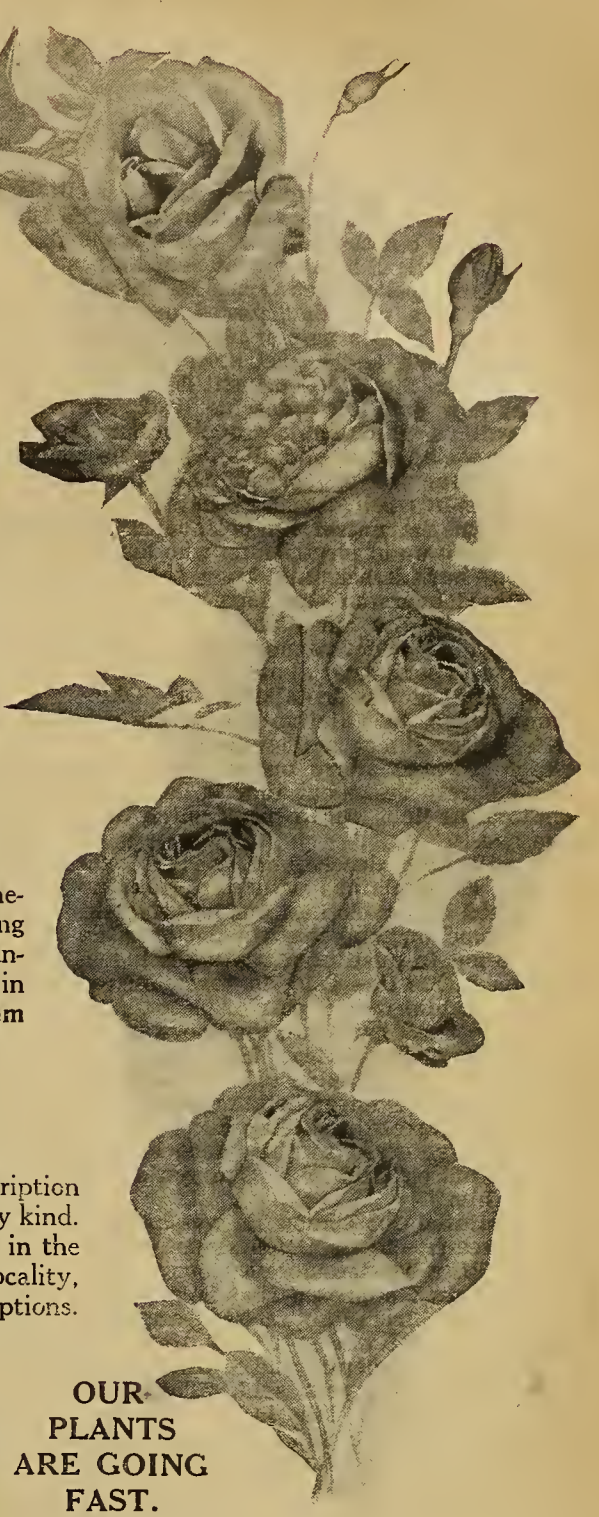
THE wonderful Flower Offers made annually by *Farm and Fireside* have become so well and favorably known that thousands of our friends eagerly await our Flower Offer Announcement each year. For this season we have the very best Collections in our history. The plants are supplied by one of the best known and most reliable Florists in the country. **We absolutely guarantee each plant to be sturdy and healthy and that it will bloom this season.**

Five Splendid Collections For You to Choose From

We have Five extraordinary Collections this year: Six Roses, Six Chrysanthemums, Six Carnations, Four Ferns and Six of the famous St. Regis Ever-Bearing Raspberry plants. Each collection is the very best we could procure and is guaranteed to please. All plants have been carefully nurtured and will be shipped in proper condition to be placed in the ground and—**Remember—We guarantee them to grow if Cultural Directions mailed with each collection are observed.**

Choice of Any Collection Given with Your Renewal

Any collection described on this page will be given with a new or renewal subscription to *Farm and Fireside* at regular subscription rates. There is no extra charge of any kind. We prepay all shipping and packing charges. You will receive all the plants in the collection you select, either immediately or at proper planting season in your locality, as explained elsewhere. We also give collections for small clubs of subscriptions. See the offers below.



THESE OFFERS WILL BE WITHDRAWN FEB. 1st

THE FAMOUS ROSE COLLECTION

Order as Collection No. 101

Our Rose Collection this season is unsurpassed for variety and distinctiveness. It consists of the following well-known plants:

Climbing American Beauty

1. This is a seedling from American Beauty, crossed with the Wichuraiana and Tea rose family. It has many characteristics of the American Beauty, same color, size and fragrance, with the addition of the climbing habit. It has good foliage and blooms three to four inches across. It is hardy, stands heat and drought perfectly.

Maiden Blush

2. This is a most charming summer bedder with beautiful, firm, glossy foliage. It is similar to the Cochet in appearance and durability, flowers of even texture. In color, it is creamy white with shadings of pink. Grows admirably in open ground.

Crimson Bedder

3. This is a favorite with all gardeners. We have included it in our collection for the past several years and have hundreds of letters from subscribers expressing their satisfaction with it. The Crimson Bedder is the best of all red roses. It is so thoroughly well known that further description is unnecessary.

Pink Maman Cochet

4. This is an unusual rose. In color it is a rich clear pink. Its buds show great depth, sometimes measuring 2½ inches from base to tip. This rose will grow in practically any climate and is one of the most beautiful of the rose family. This bush will attract all kinds of attention from passersby.

Yellow Cochet

5. The outer petals of this unusual rose are of a pure citron-yellow, edged with a delicate rose. It resembles in form the Franzisca Kruger, but has a more vigorous growth. This rose is the winner of three First Premiums at recent flower shows.

Snow Flake

6. This rose, as is implied by its name, is pure white in color. It is the finest white rose we have ever seen. A great favorite for table decoration and a wonderful potting plant. No rose collection would be complete without at least one white rose. This is one of the very best.

CULTURAL DIRECTIONS

DIRECTIONS will be in plain, simple English that anyone can understand and follow, and will explain just where to put the plants, how to take care of them, etc., so that you will be sure to get the best results.

OUR UNPARALLELED OFFERS

There is nothing complicated about these offers. You simply renew your *Farm and Fireside* subscription and take your choice of any one collection as a present from us in appreciation of your patronage. Or you can earn as many of the collections as you wish by securing the subscriptions of your neighbors. To make our meaning clear, read the following:

For $1.00 We will renew your subscription to *Farm and Fireside* THREE YEARS and send you any collection, all charges paid.

For 50c We will renew your subscription to *Farm and Fireside* ONE YEAR and send you any collection, all charges paid.

SPECIAL TO CLUB RAISERS

You can have one or more collections for getting up clubs of *Farm and Fireside* subscriptions at the special club rate of 35c per year. Subscriptions can be new or renewal and your own subscription can count in your club. We will give collections for clubs as follows:

For 2	Subscriptions	— Any One	Collection
" 3	"	— " Two	Collections
" 4	"	— " Three	"
" 5	"	— " Four	"
" 6	"	— All Five	"

St. Regis Ever-Bearing Raspberry

Illustration below shows berries grown on St. Regis plants. You get six plants in your collection, each one guaranteed to bear this year.

Accept One of the Offers Now

Every Collection is Guaranteed to Please

THESE OFFERS GOOD TO FEBRUARY 1st ONLY

OUR PLANTS ARE GOING FAST. ORDER TO-DAY

OTHER SPLENDID COLLECTIONS

If you have a Rose Collection or prefer something else, here are four other collections to choose from:

Six Exquisite Chrysanthemums

Order as Collection No. 102

This collection includes six beautiful Japanese Chrysanthemums, the finest and largest obtainable, and we are sure they will give every satisfaction. Varieties are: 1, Sensation (scarlet); 2, Golden Glow (yellow); 3, Millicent Richardson (violet); 4, Dr. Enguehard (pink); 5, October Frost (white); 6, John K. Shaw (light pink).

Six Beautiful Carnations

Order as Collection No. 109

This collection includes six carnations, each one distinctive in some particular respect. The Carnation has been well named "The Divine Flower." Our collection consists of: 1, Lady Bountiful (cream); 2, Prosperity (white-pink); 3, Ruth (pink); 4, Herald (scarlet); 5, Canary Bird (yellow), and 6, Mrs. Thomas Lawson (cerise).

Four Handsome Ferns

Order as Collection No. 104

Ferns are easily cultivated and lend an elegance and charm to any room, or can be used for porch and other outside decorative purposes. Our collection contains the best-known varieties as follows: 1, Boston Sword; 2, Plumosus Nanus; 3, Nephrolepis Compactus; 4, Sprengeri.

Six St. Regis Raspberry Plants

Order as Collection No. 108

These plants will actually bear the first season. Plants of the St. Regis variety planted in early April will give ripe berries about the 20th of June of the same year. The yield is heavy for about four weeks, but the plants continue to produce ripe fruit freely until the middle of October. The berries are large and beautiful, firm and full flavored to the very last. The St. Regis is the only raspberry, thus far known, that will yield a crop of fruit the season planted. This plant is not an experiment but a sure grower. We would strongly urge that this collection be held by our horticulturist until proper planting time in your locality. Our storage system is ideal for keeping the plants in first-class condition.

ABOUT SHIPPING

UNLESS you indicate otherwise, our florist will hold your order until it is the right season in your climate for the flowers to be planted. We advise that you leave this to the judgment of the florist, but if you want the flowers right away, say so and they will be shipped by return mail, all charges paid.

MAIL YOUR ORDER TO FARM AND FIRESIDE, SPRINGFIELD, OHIO

EW

The Triumph of Billy Helmerston

A Bride's Story as She Told It to Me Not Long Ago—By Herbert Quick

PART I

AFTER I was "finished" at St. Cecilia's I went into Pa's office as his secretary. Pa fumed, and said I bothered him; but I insisted, and after a while I became proficient as a stenographer, and spelled such terms as "kilowatt," and "electrolyte," in a way that forced praise from even Pa.

Pa began with a pair of pliers, a pair of climbers, a lineman's belt, and a vast store of obstinacy; and he has built up the Mid-Continent Electric Company.

But how does Pa order his life? He sends me to St. Cecilia's, which has no function but to prepare girls for the social swim, and all the time he gloats—simply *gloats*—over the memory of the pliers, the climbers, the lineman's belt. And he hates engineering graduates from the university poisonously, and wants his force made up of electricians who have come up, as he says, by hard knocks and know the practical side. As if Billy Helmerston—but let me begin at the beginning.

I was in the office one day superintending Miss Crowley, the chief stenographer, in getting together the correspondence about an electric-light and power installation in Oklahoma, when, just at the door of the private office, I met a disreputable figure which towered above me so far that I could barely make out that it had good anatomical lines and a black patch over one eye.

I will here deceive no one: it was Billy. He explained afterward that he possessed better clothes, but had mislaid them somehow, and that the cut over his eye he got in quelling a pay-night insurrection in his line gang in Iowa, one of whom hit him with a pair of pliers.

I almost fell back into the doorway, he was so near and so big. His way of removing his abominable old hat, and his bow, gave me a queer little mental jolt—it was so graceful and elegant.

"I was referred to this place as Mr. Blunt's office," said he. "Can you direct me to him?"

I hesitated, for I knew Pa was as hard to approach as any Oriental potentate; but as Billy became more serious in face and gesture I supposed that he was one of the men from the factory, and had business, and I was a little fluttered by the wonderful depth and sweetness of his voice. So I just said, "This way, please," and took him in to where Pa was sawing the air and dictating a blood-curdling letter to a firm of contractors in San Francisco, who had placed themselves outside the pale of humanity by failing to get results from our new polyphase generator. Billy afterward told them what was the matter with it. I saw that my workman had picked out an exceedingly unpsychological moment if he expected to make a very powerful appeal to Pa's finer instincts.

"Well," roared Pa, turning on him with as much ferocity as if he had been a San Francisco contractor of the deepest dye, "what can I do for you, sir?"

"My name is Helmerston," started Billy.

"I'm not getting up any directory," shouted Pa. "What do you want?"

"I'm just through with a summer's line work in the West," answered Billy, "and I therefore took the liberty of applying for employment in your factory. I have—"

"The blazes you did!" ejaculated Pa, glaring at Billy from under his eyebrows. "How did you get in here?"

I was over at the filing cases, my face just burning, for I was beginning to see what I had done. Billy looked in my direction, and as our eyes met he smiled a little.

"I hardly know, Mr. Blunt," said he. "I just asked my way and followed directions. Is it so very difficult to get in?"

I saw at once that he was a good deal decenter than he looked.

"Well, what can you do?" shouted Pa.

"Almost anything, I hope," answered Billy. "I've had no practical experience with inside work; but I have—"

"Oh, yes, I know!" said Pa in that unfeeling way which experience and success seem to impart to the biggest-hearted men—and Pa is surely one of these. "It's the old story. As soon as a dub gets so he can cut over a telephone, or put in an extension bell, or climb a twenty-five-foot pole without getting seasick, he can do 'almost anything.' What one, definite, concrete thing can you do?"

"For one thing," said Billy icily, "I think I could help some by taking a broom to this factory floor out here."

"All right," said Pa, after looking at him a moment. "The broom goes! Give this man an order for a broom. Put him on the pay roll at seven dollars a week. Find out who let him in here, and caution whoever it was against letting tramps come into my office. Call up Mr. Sweet and tell him I want a word with him on those Winnipeg estimates. Make an engagement with Mr. Bayley of the street-car company to lunch with me at the club at two." And Pa was running in his groove again.

"I'm sorry," Billy whispered as he passed me going out.

"Thank you," I answered. "It's of no consequence—"

And then I noticed that he was looking into my eyes in a wistful and pathetic way, as if protesting against going out. I blushed as I showed him to the door, and he wasn't the first whose eyes had protested, either.

"You mustn't violate the rules, Dolly," said Pa, as we crossed the bridge in the automobile going home. "You know perfectly well that I can't say 'no' to these tramps—"

"He wasn't a tramp," said I.

"A perfect hobo," answered Pa. "I know the type well. I have to let Burns handle them."

"He was very graceful," said I.

"Any lineman is," replied Pa. "They have the best exercise in the world. If he steals anything you're responsible, my dear."

I supposed the incident to be closed with my statement that he had nice eyes, and Pa's sniff; but in a few days Pa, who watches the men like a cat, surprised me by saying that my graceful hobo was all right.

"He gathered up and saved three dollars' worth of beeswax the other men were wasting, the first day," said Pa. "Melted and strained and put it in the right place without asking any questions. And then he borrowed a blow torch and an iron, and began practicing soldering connections. He looks good to me."

"Me, too," said I.

Pa discovered that Billy could do all sorts of things; that there was no blue print through which his keen eye could not see, and no engineering error—like that in the polyphase generator—that he couldn't detect. Billy was pushed up and up by force of sheer genius, no one knowing who he was until he found himself, like an eagle among buzzards, at the head of a department, and coming into the office to see Pa quite in a legitimate way.

I didn't know these things personally, because I had left the office. I had found out that there seemed to be more soul nurture in artistic metal work than in typewriting, and had fitted up a shop where Louise Amerland and I were doing perfectly enchanting stunts in hammered brass and copper.

After months and months of absence I visited the restaurant which I had dinged at Pa until he had instituted for the the help. He was awfully pleased afterward when the papers began to write the thing up. He said it was the cheapest advertising he ever got, and patted me on the shoulder and asked me if I wasn't ashamed to be so neglectful of my great invention. So one day I went over to the café for luncheon. And what do you think? Billy came in and sat down very informally right across from me!

"Hello!" said he, putting out his hand. "I've been looking for you for ages to—to thank you, you know. Don't you remember me?"

Before I knew it I had blushingly given him my hand for a moment.

"Yes," I replied, taking it away, and assuming a more properly dignified air. "I hope you have risen above seven a week and a broom, and I am glad to see that your head has healed up."

"Thank you," he replied. "I am running the installation department of the dynamo end of the business. And you? I'm no end glad to see you back. Did you get canned for letting me in? I've had a good many bad half-hours since I found you gone, thinking of you out hunting a job on—on my account."

I was amazed at the creature's effrontery, at first; and then the whole situation cleared up in my mind. I saw that I had an admirer—*that* was plain—who didn't know me as Rollin Blunt's heiress at all, but only as a shop-mate in the Mid-Continent Electric Company's factory—a stenographer who had done him a favor. It was more fun than most girls might think.

"How did you find out," said I, "that I had been—ah—canned?"

"I watched for you," he replied. "Began as soon as my promotion to the switchboard work made it so I could. After a couple of months' accumulation of data I ventured upon the generalization that the old man—"

"The who?"

"Mr. Blunt, I mean, of course," he amended, "had fired you for letting me in. Out of work long?"

"N-no," said I; "hardly a week."

"Where are you now?" he asked.

"I'm in a shop," I stammered.

I looked about to see if any of the employees who knew me were present, but could see none except Miss Crowley, who wouldn't meet a man in the same office in a year, and who is near-sighted anyhow. So I felt safe in permitting him to deceive himself.

It was great fun to sit chatting with him in the informal manner of colaborers at the noon intermission. It was then that I began to notice more fully what a really fine figure he had, and how brown and honest and respectful his eyes were, even when he said "Hello!" to me, as if I were a telephone, and how thrilling was his voice.

"I'd like," said he, "to call on you—if I might."

I was fluttered dreadfully.

"I—I can't very well receive you," said I. "My—the people where I—I stop wouldn't like it."

"I'm quite a respectable sort of chap," said he. "My name's Helmerston, and my people have been pretty well known for two or three hundred years up in Vermont, where we live, in a teaching, preaching, book-writing, rural sort of way, you know. I'm a university man—class of '08—but I haven't anything to boast of on any score, I'm merely telling you these things, because—because there seems to be no one else to tell you, and—and I want you to know that I'm not so bad as I looked that morning."

"Oh, this is quite absurd!" cried I. "I really—it doesn't make any difference; but I'm quite ready to believe it. I must go, really!"

"May I see you to your car?" said he; and I started to tell him that I was there in the victoria, but pulled up, and took the street car.

Soon after, quite by accident, I saw him on two successive evenings in Lincoln Park.

The next evening I took my maid and walked down by the park to look at some flowers.

Strangely fortuitous chance it surely was: we met Billy!

He came striding down the path to meet me—the maid had fallen behind—his face perfectly radiant with real joy.

"At last!" he ejaculated. "I wondered if we were *ever* to meet again. Miss—Miss—"

"Blunt," said I, heroically truthful, and suppressing one of those primordial impulses which urged me to say Wilkinson—now, as a scientific problem, why Wilkinson? But I did not wish to lose the maid's respect by conversing with a man who did not know my name.

"Miss Blunt?" cried he interrogatively. "That's rather odd, you know. It's not a very common name."

"Oh, I don't know," said I, uncandid again, as soon as I saw a chance to get through with it—little cat. "It seems awfully common to me. Why do you say that it's odd?"

"Because I happen to have a letter of introduction to Miss Blunt, daughter of the old—of Mr. Blunt of the Mid-Continent—"

"You have?" I broke in. "From whom?"

"From my cousin, Amelia Wyckoff," said he, "who went to school with her at St. Cecilia's."

"Well, of all things!" I began; and then, with a lot of presence of mind, I think, I paused. "Why don't you present it?" I asked.

"Well, it's this way," said Billy. "You saw how Mr. Blunt sailed into me and put me in the broom brigade without a hearing? I didn't have the letter then, and when I got it I didn't feel like pulling on the social strings when I was coming on pretty well for a dub lineman and learning the business, from the solder on the floor to the cupola, by actual physical contact. And then there's another thing, if you'll let me say it: since that morning I've had no place in my thoughts for any girl's face but one."

We were sitting on a bench. The maid was looking at the baby leopards in the zoo, ever so far away. Billy didn't seem to miss her. He was looking right

I was a little fluttered by the wonderful depth and sweetness of his voice

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EW

at me. My heart fluttered so that I knew my voice would quiver if I spoke, and I didn't dare to move my hands for fear he might notice their trembling. The idea of *my* behaving in that way!

I was glad to find out that he was Amelia's cousin, and not a tramp.

"I must be allowed to call on you," he said with suppressed intensity. "You don't dislike me very much, do you?"

"I—I don't like cuts over the eye," said I, evading the question.

"I don't have 'em any more," he urged.

And then he explained about the fight in the line gang. I could feel my face grow hot and cold by turns. And when I looked for the scar on his forehead he bowed his head, and I put the curls aside and found it. I would have given worlds to—it was so much like a baby coming up to you and crying about thumping its head and asking you to kiss it well. Once I had my lips all puckered up, but I had the self-control to refrain—I was so afraid.

It was getting dusk now, and Billy seized my hand and kissed it. I was quite indignant until he explained that his motives were perfectly praiseworthy. Then I led him to talk of the rich Miss Blunt to whom he had a letter of introduction, and advised him to present it, and argued that one ought to marry in such a way as to better one's prospects, and Billy got perfectly furious at such a view of love and marriage, explaining, when I pretended to think he was mad at me, that he knew I was just teasing. And then he began again about calling on me and seeing my parents, or guardians, or assigns, or *anyone* that he ought to see.

"Because," said he, "you're a perfect baby, with a baby's blue eyes and hair of floss, and tender skin, and trustfulness, and I ought to be horsewhipped for sitting here in the park with you in—in this way, with no one paying any attention."

Then I did feel deeply, darkly crime-stained, and I could have hugged the dear fellow for his simplicity—*me* helpless, with the maid and the knowledge of Amelia Wyckoff's letter, not to mention a park policeman who had been peeking at us from behind a bunch of cannas!

I grew serious just before I went home, and told Billy that he must see me on my own terms or not at all, and that he mustn't follow me, or try to find out where I lived, but must walk around the curve to the path and let me mingle with the landscape.

"May I not hope," said he, "to see you again soon?"

I went back Wednesday, and again and again, and sneaked off once with him to an orchestra concert, and it wasn't long before Billy knew that his little stenographer was willing to allow him to hope. But I refused to let him call it an engagement until he promised me that he would present the letter to the other Miss Blunt.

"Why, Dolly? Why, sweetheart?" he asked, for it had got to that stage now.

"Because," I replied, "you may like her better than you do me."

"Impossible!" he cried with a gesture absolutely tragic in its intensity. "I dislike her very name—'Miss Aurelia Blunt!'"

"That's unjust!" I cried, really angry. "Aurelia is a fine name, and she may have a pet name, you know."

"Only one Miss Blunt with a pet name for little Willie!" said he. "My little Dolly!"

But I tied him down with a promise that before he saw me again he'd call on Aurelia. When I saw him next he looked guilty, and said he had found her out when he called. I scolded him cruelly, and made him promise again. The fact was that when he called I couldn't find it in my heart to sink to the prosaic level of Miss Aurelia Blunt. I had had the sweetest, most delicious courtship that any girl *ever* had, up to this time, and I was afraid of spoiling it all. I was afraid sort of on general principles, you know, and so was "out."

Billy was perfectly cringing that next day when he had to confess that he had failed on what he called "this Aurelia proposition." He begged to be let off.

"You see," said he, "she may give me a frigid reception, and take offense at my delay in presenting this letter. Amelia may have written her, and she may be furious. There may be some sort of social statute of limitations on letters of introduction, and the thing may have run out, so that I'll be ejected by the servants, dearie. And, anyhow, it will place me in an equivocal position with Mr. Blunt—my coming to him as a tramp and holding so very lightly the valuable social advantage of an acquaintance with the family."

I here drew myself up to my full height and froze him as I have seldom done.

"Mr. Helmerston," said I, "I have indicated to you a fact which I had supposed might have some weight with you as against sordid and merely prudential considerations—I mean my preferences in this matter. It seems, however, that—that you don't care the least little bit what *I* want, and I just know that you don't—care for me at all as you say you do, and I'm going home at once!"

Well, he was so abject and so sorry to have given me pain that I wanted to hug him, but I didn't.

"I'll go, by George!" he vowed. "And I'll sit on Aurelia's doorstep without eating or drinking until she comes home and kicks me down the stairs!"

I was wondering as I went home in a long round-about way how soon he would come, but I was astonished to learn that Mr. Helmerston was in my reception-room.

"Hi informed 'im," said the footman, "that you would 'ardly be 'ome within a reasonable time of waiting, but 'e said 'e would remain until you came, Miss, nevertheless."

I went down to him just as I was, in my simple piqué dress, wearing the violets he had given me. "Mr. Helmerston," said I, "I must apologize for the difficulty I have given you in obtaining the very slight boon of meeting me, and say how good you are to come again—and wait. Any friend of dearest Amelia's, not to mention her cousin, is—"

He had stood in a state of positive paralysis until now.

"Dolly! Dolly! Dearest, dearest Dolly!" he cried, coming up to me and taking—and doing what he hadn't had a chance to do before. "Oh, my darling, are *you* here?"

After quite a while he started up as if he had forgotten something.

"What is it?" said I. "There isn't a promenader or a policeman this side of the park, sweetheart!"

"No," he answered after another interval—for I hadn't called him anything like that before—"but I was thinking that—that Aurelia—is a long time in coming home."

"Why, don't you know *yet*, you goosey," said I. "*I'm* Aurelia!" [TO BE CONTINUED]

New Puzzles

Farm Implements

Take a walk around your farm or a friend's farm and see if you can find these tools:

1. Beheld.
2. A divider.
3. An exclamation.
4. A dressmaker.
5. A jaw tooth.
6. An evergreen tree.
7. A greater quantity.
8. A one-horse sleigh.
9. A letter and a weapon.
10. A vegetable and not high.
11. A bundle and to sin.
12. A letter and a pain.
13. To draw out a secret.
14. Small and a bright color reversed.
15. A current of air and the tenth of a cent.

First-Letter Change

Transpose the first letter of the coast
Of a river or bay
So that you will have an animal
You see every day.

Jumbled Birds

Following are the names of fifteen birds mixed up. What are they?

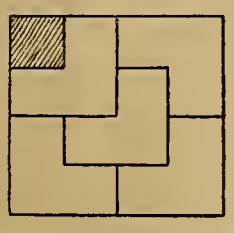
1. Allowsw. 2. Linecap. 3. Ribubled. 4. Yancar. 5. Cakechide. 6. Ginope. 7. Boliobnk. 8. Loorie. 9. Rabited. 10. Ratormcon. 11. Starbolas. 12. Sichort. 13. Armnit. 14. Pigmea. 15. Tentrib.

NOTE: Other puzzles will be printed from time to time. Answered to these puzzles will be given in the next issue.

Answers to Puzzles

Puzzles Printed Last Issue

Land Division Puzzle



This is how the section was divided.

Animal Cross-Word Enigma

The answer to this puzzle is FOX.

Enigmatic Flowers

1. Four o'clock. 2. Lady's slipper. 3. Foxglove. 4. Larkspur. 5. Hollyhock. 6. Forget-me-not. 7. Trumpet. 8. Pink.

Hidden Birds

Cormorant, warble, stork, eagle, lory, teal, brant, robin, wren, lark, tern, loon, crow, kite, owl, ern, rail.

EW

FREE

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PIPER Heidsieck

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We Want You to Try PIPER Heidsieck

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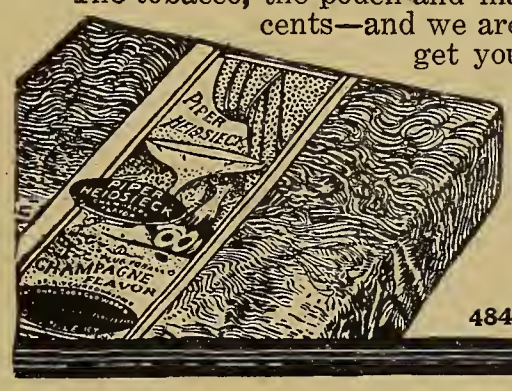
The tobacco, the pouch and mailing expenses will cost us 20 cents—and we are glad to spend the money to get you to try "PIPER" just once.



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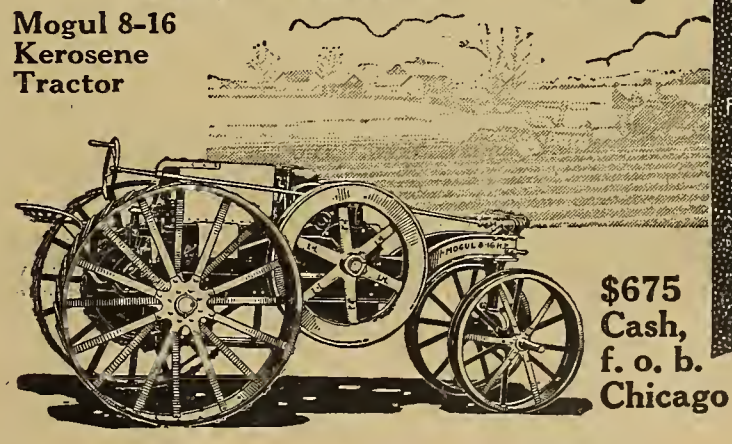
The Tractor to Buy

Mogul 8-16 Kerosene Tractor



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The Baited Trap

A Story in Five Parts by Edwin Baird

Illustrations by ROBERT AMICK

PART THREE

NOT until the following afternoon did Bob have leisure to occupy a seat in the Castle Music Hall; but he had ample time, in the interim, to reflect upon divers matters that were to him of paramount importance. Her use of the name Sherwood argued that she was still unmarried—until he consulted a fellow employee, better versed than he in theatrical lore, who clipped the wings of his soaring hope with the information that many married actresses were known to the public only by their maiden names.

It was gratifying to know that her partner, bluntly designated Fisher, was of feminine gender, but certain illusions of his were badly cracked, if not shattered, by the realization that she, Dolores, had sought a stage career. It was a hard wrench to reconcile his idealistic conception of *her* with his preconceived notion of what an *actress* is.

But more momentous than all else—dwarfing to insignificance his prejudgment of her profession, minimizing his fear that she was married to another, setting at naught the Fisher person—was the brilliant certainty of seeing her in the flesh!

He was among the first to arrive, and he sat through a dreary period of Jewish monologues, knockabout comedians, slap-stick artists, and fancy fox-trotters, until a uniformed youth slipped a card in each niche at either side of the proscenium, bearing the words:

SHERWOOD AND FISHER
IN
A TENEMENT TRAGEDY

He sat snddenly forward, hands gripping his knees, his eyes fastened on the sidewalk scene before which an impossible caricature of an Irishman, with red hair and green whiskers, had just finished telling the story of the Celt who could cry like a cat. And somehow he had the odd feeling that all those around him were likewise sitting eagerly forward—were likewise keyed up to a high pitch of expectancy. The sidewalk scene moved upward and vanished. Bob rose swiftly to his feet.

It is a singular commentary that wheu a person of phlegmatic trend of mind is once vitally aroused he may very likely become more demonstrative than one of emotional temperament. Bob was like that. The instant he got on his feet he applauded furiously, quite deaf to the fact that except for his frantic hand-clapping the house was silent. In a few seconds two or three others, here and there, clapped timorously, after the sheep-like manner of all audiences. But Bob, vociferous with his applause, was the target for all eyes.

Then the man in the adjoining seat tugged at his coat and commanded in a loud whisper:

"Sit down! You're rocking the boat."

Bob sat down, his eyes wide and shiuing. He was trembling from head to foot. Gradually, to his excited vision, the scene on the stage dissolved itself into a miserable room in a squalid tenement. The back drop represented a wall of cracked plaster and exposed laths. A few sticks of broken furniture were scattered on the floor. At a crude table in the foreground sat a frowzy woman in rags, her tousled head resting on her outflung arms in an attitude of despair.

She lifted her head, and glanced, for the fraction of an instant, in Bob's direction. The white glare of the footlights beat mercilessly upon her face—and it was a face of appalling ugliness; pallid, seamed with wrinkles and crow's feet, and expressive of vile abandon. A hideous face.

Bob stroked the lobe of his left ear in puzzled perplexity. He had regained his wonted calm.

"This is the other one, of course," he mused,—"Miss Fisher. But what—"

A door at one side of the room opened and a slim, fashionably dressed young woman entered. The blood pounded in Bob's temples; his heart seemed to struggle, palpitatingly, toward his throat. This was *she!*

For perhaps five seconds the exquisite girl's back was toward the audience while she closed the door after her. Then she turned round and came toward the wretched tenant of the room—

And Bob lost his breath and all sense of feeling and sat, for a blank period, as motionless as a statue shaped from granite.

The unsightly creature sitting beside the table was Dolores!

IX

THE violent revulsiou passed, shudderingly, and he tried to concentrate his attention ou the words coming from the stage, but they conveyed no meaning to him. The horrid creature's hoarse croaking and the handsome girl's liquid tones were nothing more than an unintelligible confusion of sound.

He contrived, finally, to gather a vague idea that the two were supposed to be mother and daughter who, tragically separated years before, were now in the throes of a tearful reunion in the mother's miserable home.

Bob got up and left, stumbling over the knees of the man who occupied the aisle seat. Outside, on the sunny street he lashed up and down the block, with his thoughts in a black swirl.

He shook his head hopelessly and strode on, his eyes on the ground, his fists doubled in the side pockets of his coat. What he couldn't understand was why a girl of her surpassing beauty should voluntarily make herself so hideous. There was no need of it. Why should she do it? He could find but one answer, a most painful one—she had lost her natural loveliness. Perhaps she had been disfigured in a railroad accident. Or maybe a devastating illness had marred her beauty for life. . . . His mind raced on, feverishly inventing other frightful possibilities, all of which were as salt to his wounds.

His aimless pacing brought him to the end of the block, and he pansed at the corner for an irresolute minnte, then turned down the side street, with the intention of going home. But he didn't go home.

When he reached the month of the alley which divided the block in two oblong halves, a motor truck, heavily laden with stage properties, backed into the street from the alley, blocking his way. While waiting for it to pass he chanced to look down the alley and, a short distance from the entrance, he beheld this sign nailed above a blackened doorway:

CASTLE MUSIC HALL
STAGE ENTRANCE

It scarcely agreed with Bob's prior conception—based largely on magazine fiction and Sunday newspaper supplements—of what a stage entrance was like. There was no sign of taxicabs, or private motor cars, or frock-coated young men in silk hats, carrying gold-headed canes—none of the things, in fact, which Bob believed always went with a stage entrance. It was all very drab and dull-looking. The only person in sight was a fat old man, wearing shabby clothes and steel-rimmed spectacles, who sat on a box beside the doorway, reading a lurid newspaper.

But this plentiful lack of glamour, instead of discouraging Bob in a sudden decision he had made, impelled him to keep it. He took up a position near the mouth of the alley.

It was a tedions vigil—not at all like the stories he had read. He compared himself to the heroes in some of those stories. Usually, he remembered, it rained while they waited, and when the dainty actresses appeared, lifting silken skirts above silken ankles, quickly proffered umbrellas had paved the way to their hearts.

Bob sighed, and shifted his weight to his right foot. The heavens were as clear to-day as May heavens can be when May is ideal.

The stage door opeued and a flannel-shirted young man, carrying an electrician's kit, came out and walked briskly toward the street, whistling shrilly. After a little, two chattering girls followed, without so much as a glance at Bob, and then came a mau whom he recognized as the Irish comedian, and after him a young couple whom he perceived to be the fancy fox-trotters. The fat old man sitting beside the door lowered his newspaper, ducked his head, and looked after the fox-trotters until they reached the street. Then, instead of resuming his paper, he transferred his owlish gaze to Bob.

Bob shifted his weight to the other foot and looked at his watch. He had been waiting twenty minutes. It seemed au hour.

With head lowered and still staring brazenly over the top of his steel-rimmed spectacles the corpulent man rose from his box and, clutching his newspaper in one pudgy hand, waddled in Bob's direction. When twenty feet away he called out grnffly:

"Are you waitin' for somebody?"

"I am!" said Bob, bristling at the other's tone.

"Oh—all right. I just wanted to know." The fat little man—now that he was standing it could be seen he was under five feet six—stopped and eyed Bob from head to foot. "Who you waitin' for?"

"Are you connected with this theater?" demanded Bob.

"Well, I guess yes! I'm the guar*deen*. Who'd you say you was waitin' for?"

"I didn't say," replied Bob. Then his perenuial good natnre overcame his prudeuce—it was always a hard wrench for him to be uncivil to auy person—and he added frankly: "I'm waiting to see Miss Sherwood."

"Oh—all right, then. I just wanted to know. Got a match about you?"

Bob had a match, aud the little old man took it and lighted an inch-length cigar stump between his lips with snch miraculons skill that the flame never touched his ragged white mustache. Puffing vigorously on the glowing stump he bobbed his thanks, clutched his yellow journal beneath his arm, and started back to his box.

Almost simultaueously the stage door opened and two attractively dressed young women stepped out into the alley. The plump little man stopped, ducked his head, and peered at them over his spectacles, somewhat like a rotund poodle expressing alertness. Then he turned round to Bob.

"Here's Miss Sherwood now," he said.

X

THE girl iu the lead, a young girl with lustrous dark eyes and a cloud of black hair, a girl whose every feature he kuew far better than his own, whose captivating face he would have known in a million, looked at Bob inquiringly. And she had nothing to fear from the pitiless spring sunshine, for he saw, even in an instant's glance, that she was as fresh, as youthful, and as exquisitely beautiful as he had always conceived her to be—and he had studied her photographs a thousand and one times with most wondrous attention to detail.

Now that he had seeu her and killed the horrid doubt which had takeu root in his mind, Bob was seized with an unaccountable impulse to flee. He was a remarkably shy young mau with girls.

But there was a cogent argument against his retiring, to wit: the distrustful stare of the fat little old man who stood a few feet away. He could almost feel the hard scrutiny of that stare, beut suspiciously upon him over the steel-rimmed spectacles. It seemed to utter a sharp challenge:

"Well, here's Miss Sherwood. You said you was waitin' for her. Well?"

No, he couldn't rnn away. If he did the old man would surely think the worst of him; would certainly condemn him as one of those odious pests—a street "masher." Bob held his ground. Yet how could he speak to a girl he did not know—or, at least, who did not know him?

Miss Sherwood herself solved the problem. She came toward him with the serene confidence of a young woman who is accustomed to taking care of herself, her large dark eyes frankly cordial, but not too cordial. And she said in a cultivated voice as delightful as gentle music:

"Were you waiting to see me?"

Bob's hat came off precipitately, crushed in his capacious right hand.

"Y-yeah," he stammered,—"sort of. I—I—you see, I nsed to kuow your brother, Miss Sherwood. My name's Yates. Bob Yates. Maybe you've heard him speak o' me. Anyway, I—I kinder thought—" He came to a dead stop. His face was the vivid color of a rooster's comb.

With tact so delicate that he was not even aware of it she gracefully relieved his hopeless confusion by saying, with a soft little laugh that was as pleasing as her voice:

"Oh, I see! And of course you felt that you knew me too. Really, that was generous of you." She turned to her companion, a merry-eyed blonde, with a rose-leaf complexion, who had drawu near. "Miss Fisher, let me present Mr. Yates. He's a friend of Frank's."

Somewhat boyishly Miss Fisher darted forth a white, ungloved hand.

"Any friend of Frank's is a friend of mine," said she, and smiled so bubblingly that her small, milky teeth flashed for a moment behind her red lips. There was no denying a certain charm in the girl.

Bob, further disconcerted by Miss Fisher's unexpected breeziness, felt her warm, slim fingers flutter into his great hand like the petals of a white rose. He pressed them, released them, and tried to think of a witty rejoinder. He couldn't do it. The best he could do was:

"Pleased to meet you, Miss Fisher!"

"Now that we're all good friends," said Dolores with a smiling flash of her dark eyes at Bob, "let's all move on."

This was agreeable, and the three of them walked toward the street, the girls chatting as gaily to Bob as if they had known him for years. Such is the genial spirit that obtains among those whose lives are divided chiefly between sleeping-cars, dressing-rooms, and theatrical boarding-houses.

Dolores suggested that they walk east to Michigan Boulevard, and as they emerged from the alley and turned in that direction Bob glanced over his shoulder with a triumphant light in his eyes.

But, to his momentary chagrin, the little old man was not there to receive it. He was sitting ou his box beside the stage entrance, his fat knees crossed, his teeth champing the cigar stump with short energetic movements, and the steel-rimmed spectacles were focused upon the lurid newspaper with an obliviousness to the three light-hearted young people which seemed to say, "All's well!"

[TO BE CONTINUED]

EW

Miss Sherwood came toward him, her large dark eyes frankly cordial. "Were you waiting to see me?"

Make Your Room Pleasant

Girls Can Arrange Cheerful Surroundings

By ALICE PRESTON MILLS

Whether a girl has a delightful room or not isn't a matter of money, but one of planning and fixing old furniture and furnishings in new forms

A GIRL whom I know feared she would have to remain discontented with a dismal room because she hadn't any money. Then she did some clear thinking. This resulted, with a little work, in a delightful done-over room.

This girl's room, in itself, was pleasant. It was papered with a pale blue striped paper; had woodwork of white, and two south windows. But the floor was full of cracks. The furniture consisted of an uninteresting little rocker and window seat; an iron bed, badly scratched as to surface, but with good mattress and spring; and a low chest of drawers with ornate brass pulls, and a poor-quality mirror above it.

First of all, in doing over the room, the girl swept and scrubbed the floor, and filled the cracks. She then painted the floor.

Then she began searching about for old, marred pieces of furniture, the only stipulation being that they must be made on good lines. In the attic she found a little sewing table, badly scratched, and an old organ stool, from whose top the padding bulged. There was also an old folding bed, with a good solid top, finished at the back with a little scroll rail about four inches in height. Her father removed the top bodily, and at her request invested it with four square legs, and built a little drawer on each side, leaving an open space in the center, such as is found in every regulation dressing table.

This table, the organ stool, the sewing table, chest of drawers, and the rocking-chair were painted three coats of plain white paint, and finished with one of white enamel, each coat being carefully sandpapered before the next was applied.

A neighbor, greatly interested, discovered in his attic a single walnut bed, but told the girl he feared it was of no use, since the high head- and footboards were covered, for a depth of two feet, with hideous "carving." She studied it carefully, then asked her father to saw off the entire portion encrusted with the carving and to leave only a four-inch projection of end post at each corner. After treating this to paint and enamel, and putting in place the spring and mattress from the old bed, the enthusiastic girl danced a joyful whirl of happiness.

Builds Pine Writing Table

She needed a table for writing and for magazines and books, and, finding nothing suitable, her father built one of white pine, making it 40x28 inches, with a shelf beneath. This table and a discarded dining-room chair for a desk chair were then finished in white.

Now she was ready for hangings and, having so many light tones, decided on a cretonne with yellow roses and green leaves, over white muslin, for side curtains at the windows, a cover for a long low window seat, and for the upholstering of her dressing table, desk chairs, and the rocker. The cretonne was tacked on with brass-headed tacks, over a heavy padding. The finished articles were lovely.

The dressing-table chair—the organ stool—was particularly useful because the girl could swing on it from side to side or entirely around.

Plain white muslin, banded with the cretonne, made the bedspread. The sewing and dressing table and chest of drawers had scarfs of plain white, simply embroidered with her monogram in yellow.

A yellow blotting paper and some brass desk fittings, costing a few cents apiece, finished the color scheme. Green and white rag rugs were placed on the floor, and a few pennants and pictures, in yellow and black or blue, were hung on the walls.

The girl lacked only a mirror for her dressing table, and had no wherewithal for its purchase, but on the happy day when she was graduated from high school, a few weeks after completing her room, she found among her gifts a mirror in a white enamel frame.

Here are two more color schemes, in case you wish to begin renovating a room immediately—one for a room on the shady side, which will need warm hangings and walls; the other for a sunny room, which must be kept cool in effect. Both of these have been worked out recently, and nothing could have been more charming.

Dark Rooms Need Bright Colors

For the shady room choose a soft, rose-pink on the walls, in either a paper, paint, or tint, and let the woodwork be white.

Have the bed, a chest of drawers, and a little dressing table, very simple in line, as well as a small writing table, all in a delicate moss-green, either paint or stain. Get a big padded chair, which may be made of a box, covered in a cretonne with pink roses, just the color of the walls, and use this cretonne for side curtains and the covering for a window seat. The dressing table and desk chairs may be of wood, stained green, or of wicker, and the mirror frame might be of white enamel to match the woodwork, or of green.

The inner curtains and bedspread should be plain white, and the rugs pink and white striped, on a dark green floor.

If you wish a rose-flowered wall, use plain hangings of soft pink linen or silkoline.

Do not neglect the closet, but cover pasteboard boxes with wall paper, set them on a white-painted shelf, and paint the little wooden hangers white. Hang a cretonne shoe bag or a white shoe rack on the door.

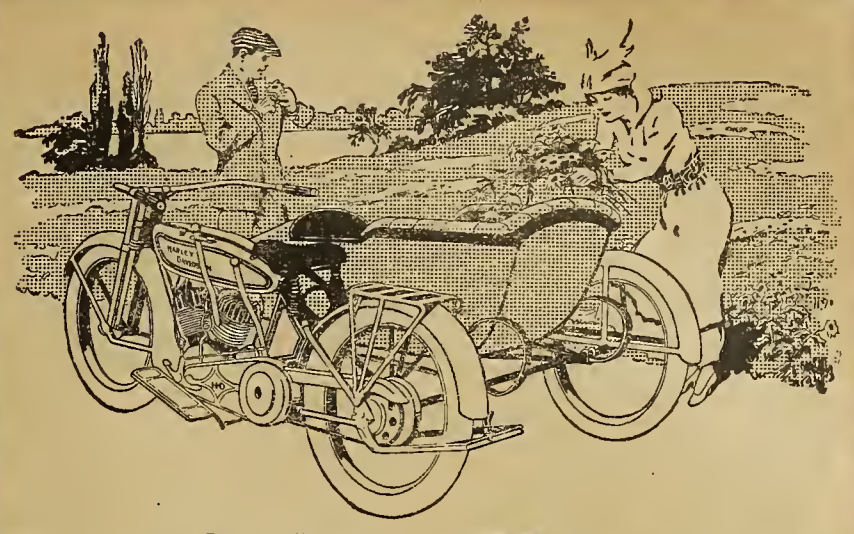
If the room is small, or you cannot have so much furniture, make the bed and a simple bureau and window seat attractive, and put up a shelf for books and flowers, for it will take no floor space.

For the sunny room, in lavender and gray, use a pale gray striped paper on the wall and white paint for the woodwork.

If there is no bath, provide a washstand or table, and let its array of china carry out the color scheme also, but keep the design simple. Do not neglect the closet of this room either, but make it lovely as possible.

Give your daughter such a room that, no matter what comes to her in future years, she will always think of it and of Mother with a throb of unquenchable love.

E



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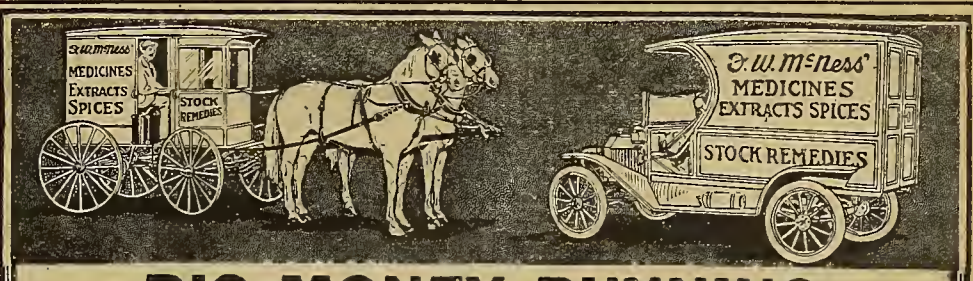

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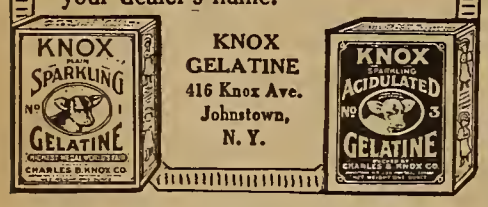

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Teeny Weeny

The Fairy That was Lost and Found

By HARRY W. FREES

LITTLE Teeny Weeny, the smallest fairy of Fairyland, was scarcely bigger than your little finger. She was still too small to fly, as her tiny wings were not yet strong enough to bear her weight.

All day long she played in the palace garden of the Fairy Queen. She would often seat herself in the heart of a big white lily while the gentle breeze swayed the blossom to and fro. And then again she would sip the honey from the tiny cups of the smaller flowers. She was a happy little fairy, with nothing to do the livelong day but to play. Many a game of hide and seek she enjoyed among the flowers with the butterflies and the humming-birds.

One day the smallest fairy was swinging gently in her lily cradle when a dark shadow fell upon her. Before she had time to utter a sound a terrible creature, that appeared to be half bird and half animal, had pounced upon her. The next moment she was being carried swiftly upward.

Poor Teeny Weeny struggled to free herself, but the cruel claws only gripped her tighter. No one had ever told her of the Terrible Dragon, and how he sometimes carried off the baby fairies to his nest in the Distant Mountain.

When Teeny Weeny was found to be missing, all the fairies of the palace hunted the garden high and low in search of her. But she was nowhere to be found.

Choking, they walked over the Valley of Smoke

The Story the Lazy Cricket Told

FINALLY a big, fat, lazy cricket, perched on the garden wall told them of how the Terrible Dragon had seized the tiny fairy and carried her away.

All the fairies, big and little, felt so sorry for poor Teeny Weeny that they hardly knew what to do. The Fairy Queen herself was nearly heart-broken, for the smallest fairy had always been her favorite. Even the flowers in the palace garden seemed to hang their heads in sorrow at the loss of their little playmate.

The Woolly Bear

But among all the fairies of the palace none missed Teeny Weeny more than her two older sisters, Dewdrop and Rainbow. They at once decided to go in search of her and, after seeking permission from the Fairy Queen, started bravely on their journey.

For a long time they flew swiftly on in the direction of the Distant Mountain. The clover heads and daisies' faces, nodding cheerily in the meadow grass beneath them, called to them to stop, but they gave no heed.

The laughing waters of the sparkling brook, winding here and there below them, gurgled of cool places to be found on its mossy banks, but even this did not tempt them. Even the waving branches of the willow trees beckoned them a welcome, but all in vain. With their downy wings flashing brightly in the golden sunshine, Fairy Dewdrop and Fairy Rainbow kept steadily onward.

Finally Dewdrop caught sight of a cave in a pile of rocks beneath them, and she slowly fluttered down, followed by Rainbow.

"It's the home of the Woolly Bear," explained Dewdrop. "If he is in his cave we will ask him the way to the Distant Mountain."

Just then the Woolly Bear stuck his head out of his hole in the rocks and caught sight of the two little fairies.

"Good morning, my dear little fairies," he growled in as pleasant a tone as a bear can talk, just as though the appearance of two little fairies was a common thing to him.

"Good morning, my good Woolly Bear!" replied Dewdrop. "We are on our way to the Distant Mountain in search of the smallest fairy, who has been carried away by the Terrible Dragon, and we have stopped to ask the way."

"The way is long and leads through many dangers," answered the Woolly Bear. "Close by you will find the path that leads through the Forest of Knives and Forks. If you wish to rescue the smallest fairy, do not fly over it but walk bravely through it. If you are not afraid of its keen edges and sharp points you will not fear the sharp teeth of the Terrible Dragon."

After thanking the kind Woolly Bear, Fairy Dewdrop and Fairy Rainbow started away and soon arrived at the Forest of Knives and Forks. Without hesitating for a moment they started boldly on through the rows of glittering knives and forks, taking care that none should touch them. They soon reached the other side in safety, and once more arose into the air and flew ahead as before.

Warned of Danger

SUDDENLY Fairy Rainbow caught sight of an odd-looking little man sitting on a rock below them.

"It is the Wisest Man of All," she said to Fairy Dewdrop. "We will stop and ask him the way to the Distant Mountain."

The Wisest Man of All bowed very politely to the two little fairies as they alighted before him.

"Good Morning, my dear little fairies!" he greeted them in a high,. squeaky kind of a voice, just as though the sight of two little fairies was not the least bit surprising.

"Good morning, my good Wisest Man of All," replied Fairy Rainbow. "We are on our way to the Distant Mountain in search of the smallest fairy, who has been carried away by the Terrible Dragon, and we have stopped to ask the way."

"The way is long and dreary," answered the Wisest Man of All. "Beyond lies the Valley of Smoke. Be sure and not fly over it, for whoever has the courage to walk through it will not be harmed by the fiery breath of the Terrible Dragon."

After thanking the Wisest Man of All, Fairy Rainbow and Fairy Dewdrop started again on their journey. They soon came to the Valley of Smoke and started bravely through it.

The stifling smoke rose up all around them in a dense cloud, but not for a single moment did they hesitate. They both held their breath as long as they could, and just as they were compelled to breathe again they found themselves safely on the other side.

Wisest Man of All

Once more they took to their tiny wings and flew rapidly ahead, until at last they came in sight of the Distant Mountain.

As they approached nearer to it they were able to see the nest of the Terrible Dragon perched in the midst of the highest peaks. And in the nest stood little Teeny Weeny, awaiting them with outstretched arms.

The two fairies were overjoyed at finding their little sister safe and unharmed. And Teeny Weeny caught them both around the neck just as tight as she could and nearly squeezed the breath out of them, she was so happy to see them.

Just as they were starting away, carrying Teeny Weeny between them, the Terrible Dragon came flying toward them with a fearful hissing noise.

A Victory That Made Them Happy

HE TRIED to blind them with his fiery breath, but the charm of the Valley of Smoke only caused him to destroy his own sight. He tried to tear them with his cruel teeth and claws, but the charm of the Forest of Knives and Forks only caused him to wound himself. Finally, he sank slowly downward among the rocks of the Distant Mountain, and never again was the Terrible Dragon seen in Fairyland.

There was great rejoicing in the fairy palace when Dewdrop and Rainbow returned safely home with the smallest fairy. All the fairies were as happy as could be, and even the flowers once more nodded gaily.

But happiest of them all was little Teeny Weeny herself.

Bravely they walked through the Forest of Knives and Forks

E

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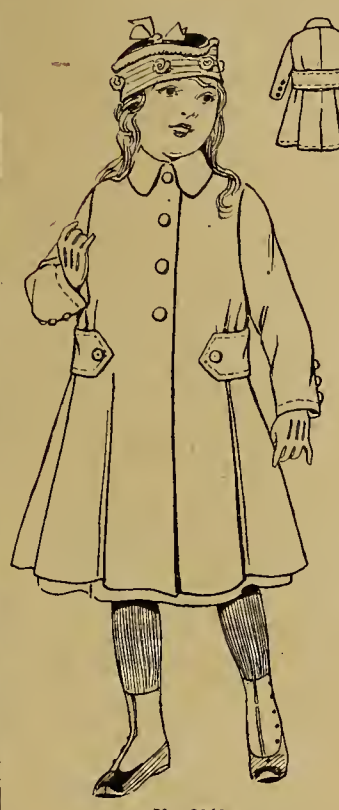
Ideas for Midwinter Sewing

Practical Patterns for January Selected by Grace Margaret Gould

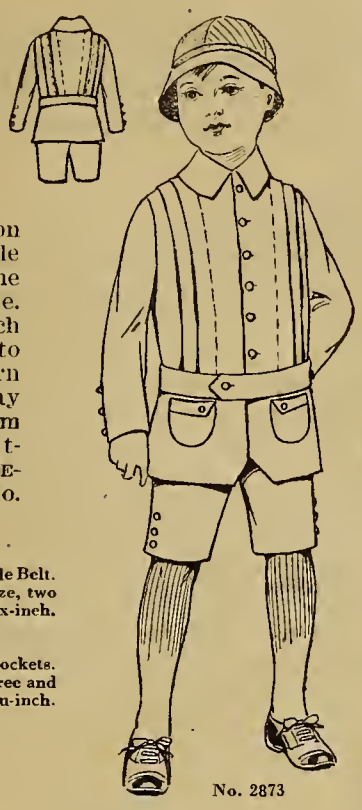
ALL of the patterns on this page are simple and easy for the home seamstress to handle. The directions on each are plain and easy to follow. Each pattern costs ten cents, and may be ordered by mail from the Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.



No. 2860

No. 2860—Girl's Long Coat with Wide Belt. 4 to 14 years. Material for 8-year size, two and seven-eighths yards of thirty-six-inch. Pattern, ten cents

No. 2873—Boy's Suit with Patch Pockets. 6 to 10 years. Material for 8 years, three and seven-eighths yards of twenty-seven-inch. Pattern, ten cents



No. 2873

No. 2908

No. 2902

No. 2908—Made with angel sleeves

No. 2920
No. 2921

No. 2908

No. 2902—Shirt Waist with Plastron. 34 to 44 bust. Material for 36-inch bust, two and three-eighths yards of thirty-six-inch, or two yards of forty-inch. Price of pattern, ten cents.

No. 2920
No. 2921

No. 2908—Adaptable Negligee, Angel or Short Sleeves. 32 to 42 bust. Material for 36-inch bust, four and three-eighths yards of thirty-inch, with five-eighths yard contrasting for trimming and one-half yard for angel sleeves. The price of this pattern is ten cents

No. 2920—Girl's Blouse with Plaited Skirt. 12 to 16 years. Material for 14 years, three yards thirty-six-inch, one-fourth yard contrasting for skirt, and two and three-eighths yards twenty-seven-inch pique for blouse. The price of this pattern is ten cents

No. 2921—Girl's Bolero with Pointed Revers. 12 to 16 years. Material for 14 years, one and one-fourth yards thirty-six-inch, five-eighths yard contrasting. The price of this pattern is ten cents

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P. O. Box 161 New York Dept. PX

Even Women folks can Paint Houses - *Read what Mrs. F. J. Smith did*

She writes from Coldwater, Mich., telling how she and her sister decided to help their father by painting the house.

"We had decided on Sherwin-Williams ready-mixed paint," Mrs. Smith says, "as that would be all ready and easier for us to put on, and we had heard it highly recommended. Many times we got so tired we thought we would have to give it up, but would struggle on as some one would come along and give us a word of encouragement.

"We finished our job and also used some Sherwin-Williams inside paint on inside work. We made a blue room by painting an old-fashioned bedstead light blue and some other pieces to match. We were tired but triumphant when we were through. And we had a good many compliments for our work.

"I have used the same kind of paint many times since with always good results."

What Mrs. Smith says about Sherwin-Williams Paint is a better advertisement than anything we can write here.

But she would probably have had an easier time with this work if she had first read

The ABC of Home Painting
which we are now offering free to readers of this paper. It tells exactly how to paint, varnish, stain or enamel every surface in the house and on the farm. Have you sent for a copy yet?

Going to Market
is a mighty interesting game for both young folks and grown-ups. It's good training, too, for anyone who buys or sells in the markets. Sent for 10 cents in stamps.

SHERWIN-WILLIAMS
PAINTS & VARNISHES
COVER THE EARTH

Sales Offices and Warehouses in principal cities. Best dealers everywhere.
Address all inquiries to 691 Canal Rd., N. W., Cleveland, Ohio

Housewife's Club

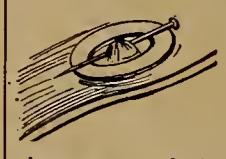
To Identify Poisons

By Mrs. C. B. Parks

OF COURSE, the logical way is to keep all bottles properly labeled and out of reach, hut there is generally a careless member in every family who persists in leaving everything where last used. And where there is a haby or a child who can't read the labels, poison is a dangerous thing to be careless with. The safest method is to run a cord through the cork, leaving ahout eight inches of string on opposite sides of the cork. Then drive the cork in as tightly as possible, and wrap the string around the neck of the bottle in opposite directions and tie securely. If that hottle is opened it will be opened intentionally.

If there are no hahies on the place an easier method is to run three or four pins crisscross through the cork. The pins' sticking the fingers will prevent accidental use of the contents.

To remove ink stains from table linen, soak for twenty-four hours in kerosene, then wash as customary, and the stain will disappear. The writer recently removed a stain from a pure linen tablecloth where the contents of an ink bottle had heen spilled. A. B. R., Illinois.



To Sew on Buttons—This is the way Annahelle Turner, instructor in home economics, University of Wisconsin Extension Division, says a button should be sewed on:

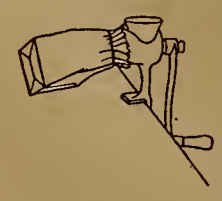
Take a small stitch, bringing the knot on the right side. Run the needle up through one hole of the hutton and draw it down just over the knot. Lay a pin across the button and work the stitches over the pin. When the button is firmly sewed on, remove the pin. Pull the button out from the material and wind the thread around the threads hetween the hutton and the cloth several times to form a shank. Pass the needle through to the wrong side and fasten the thread with several small stitches. The shank formed makes buttoning easier and lessens the strain on the cloth. The knot is brought up on the right side and under the button to keep it from being worn off.

Rice Potato Cakes—One cupful of cold boiled rice. One cupful of cold mashed potato. Warm rice and potato until soft enough to handle. Mix, season with butter, pepper, salt, and cream. Add sufficient flour to bind; shape into round cakes, using the hand and a floured paddle and fry in hot fat.

If soot is dropped on the carpet, cover it thickly with salt. Both may be swept off clean without soiling the carpet.
LAURA S., Alabama.

Blanc-Mange—One envelope of granulated gelatin, three and one-half cupfuls of milk, one teaspoonful of vanilla or one tablespoonful of rum, three-fourths cupful of sugar. Soften the gelatin in one-half cupful of cold milk five minutes; scald the rest of the milk and dissolve in it the sugar and softened gelatin; strain, and when cool add the flavoring and turn into a mold. Serve with currant or other jelly, with cream and sugar, or a boiled custard. Substitute cream for the milk and the dish becomes Ivory Jelly. When desired, candies, fruits, or nuts may be molded in the blanc-mange. H. E. L., New York.

To bleach table linen, muslin, and other unbleached articles, place in a hoiler with bluing water as for rinsing, then boil. Hang on the line without rinsing. At the next laundering it will be snow-white. A. B. R., Illinois.



Catch Those Crumbs—Use paper hags to catch the bread and cracker crumbs from the food grinder. Yes, and all other food too. There is no cleaning up to do. Just toss the hag into the stove. Slip a ruhber on the neck of the food grinder and the bag. The rubher holds it in place.
E. K. J., North Dakota.

Beans with Bacon—Pick over and wash four cupfuls of beans, and soak overnight. Cover with water and cook two hours. Cut four slices of hacon, and fry a nice brown with four onions peeled and sliced. Add to the beans, and cook one or two hours longer. Salt to suit and keep moist. MRS. J. S., California.

Prune Jelly—To each cupful of prune juice use one cupful of apple juice, which helps to make it firm. Use one cupful of sugar to two cupfuls of juice. Boil until it jellies. C. Q., Idaho.

Housewife's Letter Box

Who Can Answer?

HAS anyone a grape-leaf design in cross-stitch? MRS. W. L. K., California.

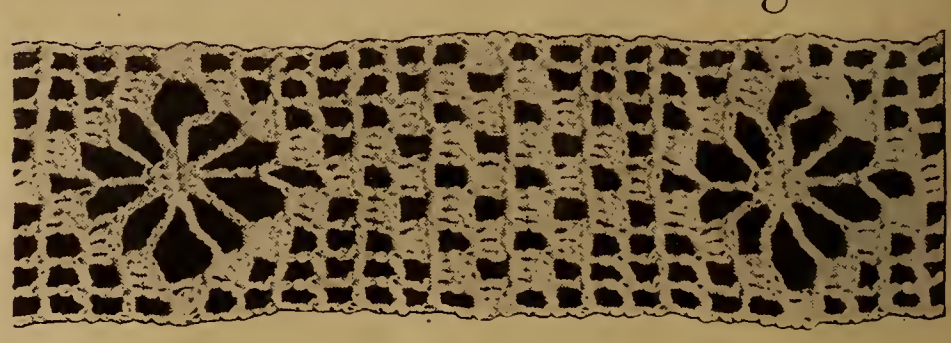
OVER twenty years ago there appeared in FARM AND FIRESIDE a recipe for biscuit and one for white loaf cake which I tried, and they were delicious. I believe the hiscuit recipe was called Farmers' Biscuit, and they were made with yeast and would keep for days. The cake recipe called for cornstarch. Having lost the recipes in moving, I should be glad if I could get them again.
MRS. N. B., Missouri.

Orange Marmalade

Can you supply me with recipe for marmalade published some time ago?
Mrs. N. W., New York.

ONE grapefruit, four oranges, one lemon. Use pulp of grapefruit. Cut oranges in small pieces, add juice of lemon. To this add three times as much water; let stand twenty-four hours. Cook ten minutes, let stand twenty-four hours, and again cook ten minutes. The third morning add measure for measure of sugar, and cook as you would jelly. This will make about a dozen glasses.

Filet Insertion and Edge



NOW is the time to make trimming for summer dresses. Several yards of insertion like this, with edge to match, will come in handy when you begin your spring sewing. By turning square corners, dainty underwear yokes can be made from this pattern. To get directions for this pattern, send four cents to Fancy-Work Editor, FARM AND FIRESIDE, Springfield, Ohio.

E

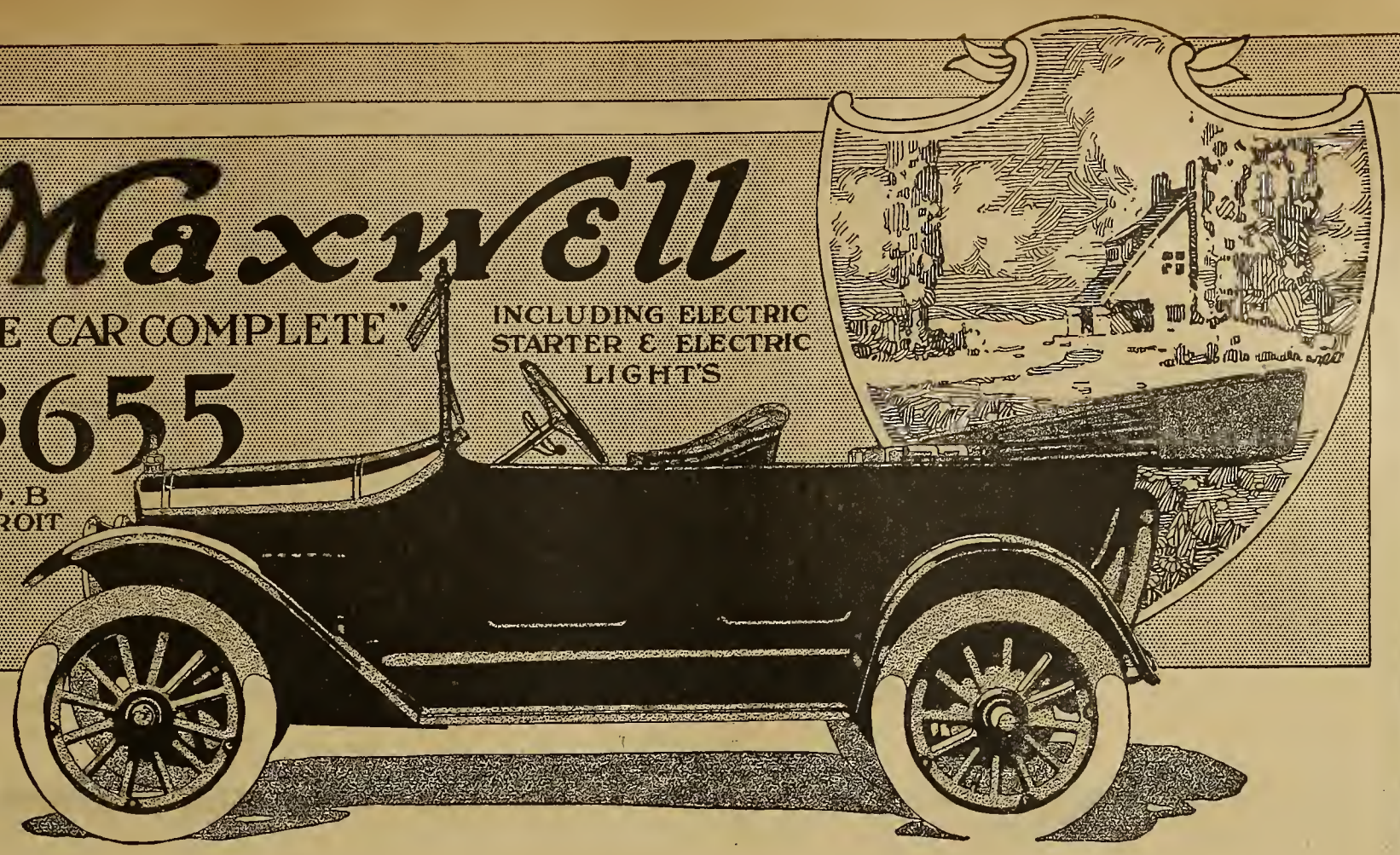
Maxwell

"THE CAR COMPLETE"

INCLUDING ELECTRIC STARTER & ELECTRIC LIGHTS

$655

F. O. B. DETROIT



The Value of "Complete"

YOU never raise a barn without including the cost of a roof—to make it complete.

You never buy a wagon without including the cost of the tongue—to make it complete.

You should never buy an automobile unless everything needed to make it *complete* is included in *the price advertised.*

Maxwell—The Proof

$655 is the limit of your Maxwell investment. All the dollars that you might spend for "accesssories" so often necessary would not make the Maxwell more comfort-creating—more finished—more complete.

Compare the Maxwell with what you had expected to find in an absolutely high-grade automobile of *proven performance* for $655.

Read the list of features that go to make the Maxwell complete—all are yours without extra cost when you buy a Maxwell.

And the *after-cost*—the Maxwell again stands for the *utmost* in motoring economy. By actual records, based on sworn affidavits and the unsolicited reports of thousands of owners, the Maxwell has established undisputed supremacy for low gasoline consumption—low oil consumption—excess tire mileage—low repair bills.

Think what this means. For $655 you can own a powerful, fast, handsome, dependable, full five-passenger automobile.

You can know its benefits *without* incurring the high expense that is part of most automobiles of equal size and completeness.

Write for some interesting facts and photographs and name of nearest Maxwell Dealer

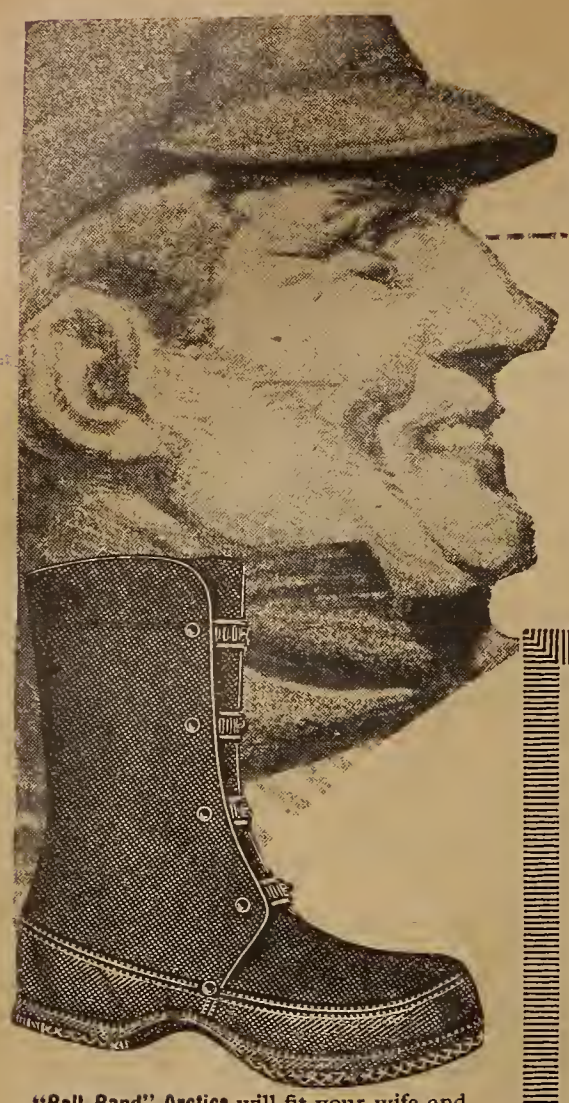
MAXWELL MOTOR COMPANY, INC.

Dept. AG DETROIT, U. S. A.

This gives you the right idea of Maxwell completeness at $655

ELECTRIC Starter and Electric Lights.
MOTOR—Four-cylinder, L-head type, cast en bloc. Bore 3⅜ in.; stroke 4½ in.; detachable head; oil reservoir of aluminum; valves completely enclosed.
MAGNETO—Simms high tension.
CLUTCH—Cone, faced with multibestos lining, runs in oil, takes hold smoothly and without grabbing.
TRANSMISSION—Selective sliding gear. Three speeds forward and one reverse.
CONTROL—Center, left side drive; foot accelerator. 16 in. steering wheel; improved instrument dash board with all instruments set flush.
WHEEL BASE—103 inches; tread 56 in.; 60 in. optional for the South.
WHEELS—Artillery, of best grade hickory; 12 spokes in both front and rear; equipped with Stanweld demountable rims.
TIRES—30x3½ in., front and rear. Famous make of anti-skid tires in rear.
SPRINGS—Front, semi-elliptic, 32 in. long. Rear ¾-elliptic, lower half 40 in. long, scroll 16 in. long from center of spring shackle to spring seat; fixed at front, shackled at rear and mounted on rocking seat.
AXLES—Front, drop-forged, I-beam section, complete with spring seats. Rear, floating type. No load carried on driving shafts.
BRAKES—Internal and external, actuated on 12½ in. drums on rear wheels.
EQUIPMENT—Two electric head lights with dimmer, electric tail light, generator, storage battery, electric horn, speedometer, "one man" mohair top with envelope, and quick adjustable storm curtains, double ventilating rain-vision windshield, improved instrument board with all instruments set flush, demountable rims, spare tire carrier with extra demountable rim, jack, special wrenches and tools.

EVERY ROAD IS A Maxwell ROAD



"Ball-Band" Arctics will fit your wife and your children. A full line of sizes at your dealer's. The Red Ball is on the sole. Look for it.

Discover Rubber Footwear Quality by Looking for the Red Ball

LOOKING at a rubber is no way to judge its quality. All rubber footwear looks pretty much alike, but it doesn't all wear alike. The Red Ball, the Trade Mark of "Ball-Band," is a Quality Mark. It stands for work done with a conscience—for footwear that is built over a natural last so it will fit and feel good, and made with the everlasting intention that it must wear, *wear,* WEAR. Figure how much it costs per day to keep your feet dry and comfortable in "Ball-Band" Footwear and you will see how you save money in buying it.

"Ball-Band" Boots are vacuum cured. During the vulcanizing this process causes a tremendous pressure on the fabric and rubber and makes the boot one solid piece.

"BALL TRADE MARK BAND"

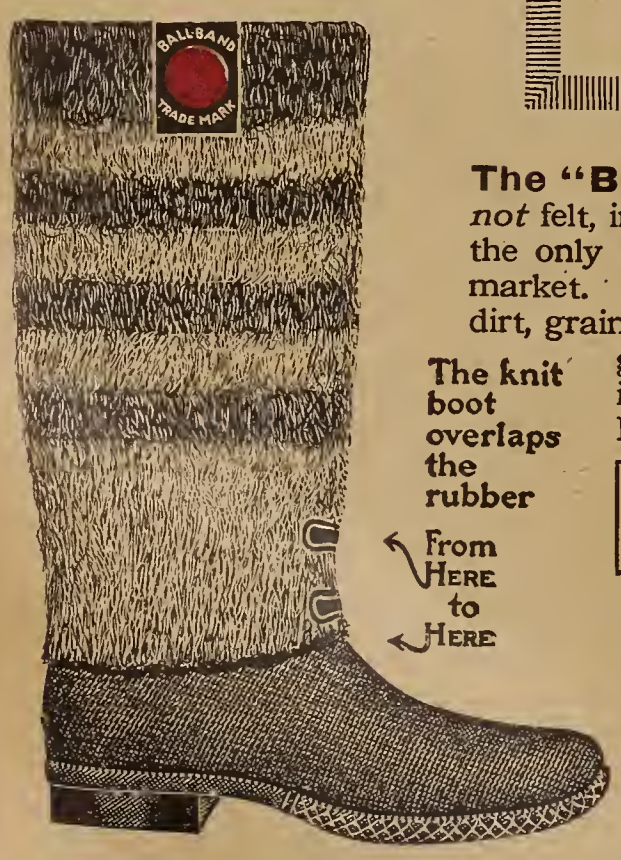
These arctics keep toes and ankles snug and warm—shut out the wet, cold snow and wind. Warm wool linings, cashmerette tops, tough rubber soles.

"Ball-Band" Rubber Footwear is a genuine case of the best being the cheapest. That's why eight and one-half million men wear it and over 50,000 merchants sell and recommend it.

Look up the store that shows the Red Ball—the "Ball-Band" sign. If you don't see it on the goods, you are not getting "Ball-Band" quality. If your dealer cannot supply you, write us and tell us his name. We will see that you are supplied.

Write anyway for our free booklet, **"More Days Wear"**

This book is worth having. It tells how to take care of your rubber footwear to make it last longer—what to do with your rubbers when you get home and take them off. Much good footwear is ruined by thoughtless treatment, that you can avoid. Read the free booklet and avoid hurting your own property.



The "Ball-Band" Coon Tail Knit Boot is *knit, not* felt, insuring the utmost wear and service. Ours is the only high-grade knit boot of this character on the market. The patented snow excluder keeps out snow, dirt, grain and chaff, and keeps the ankles warm. Heavy gum overs to fit. This boot is completely shrunk; it can be washed when dirty. Look for the Red Ball on the straps.

The knit boot overlaps the rubber

From HERE to HERE

Something New "Ball-Band" Light Weight Rubbers for street wear in Men's, Women's and Children's sizes. They are "Ball-Band" Quality and Value. Look for the Red Ball on the sole.

Mishawaka Woolen Mfg. Co.
305 Water Street
Mishawaka, Ind.

"The House That Pays Millions for Quality"

EW

More Than 600,000 Copies Each Issue

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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

5 cents a copy

Saturday, January 29, 1916

PHOTOGRAPH BY JOHN KABEL

Almost Ground-Hog Day

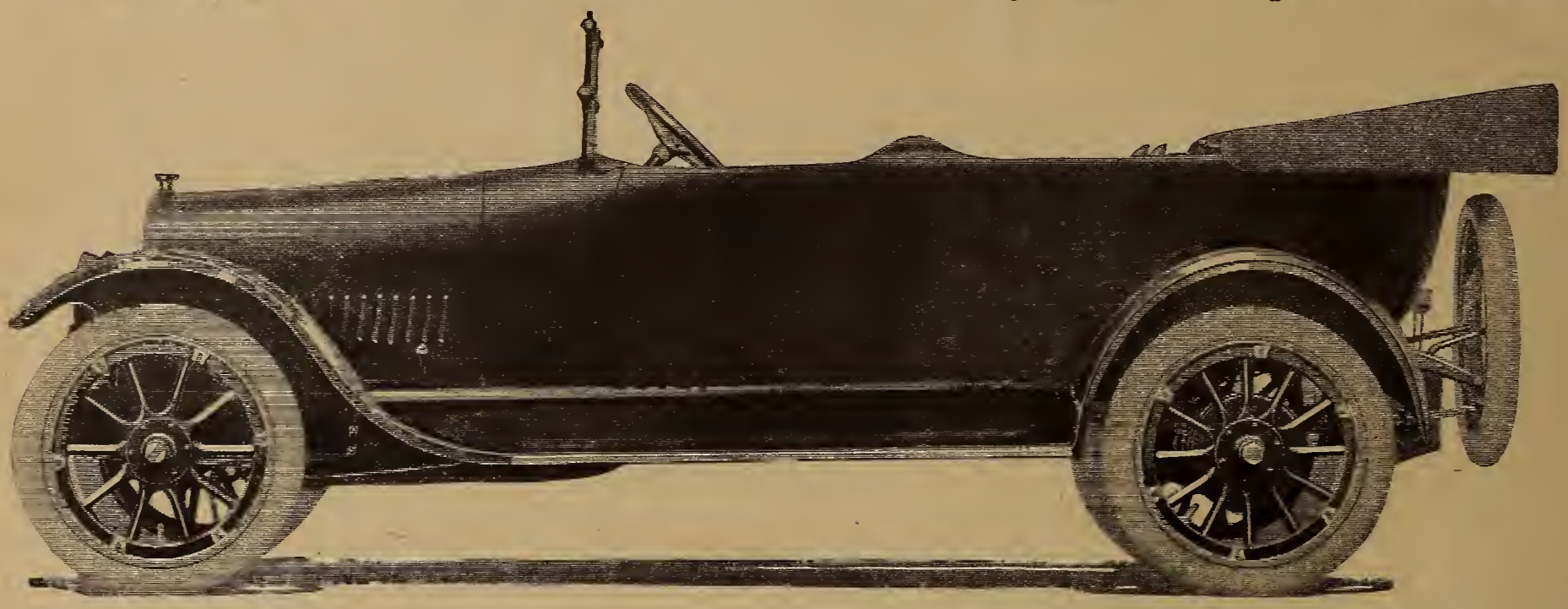
The NEW and GREATER CHANDLER SIX

$1295

POWER—Ample to take this car, loaded, anywhere that any automobile can go.

SPEED—More than 999 out of every thousand car owners would ever want or dare to use.

MOTOR—The Marvelous Chandler Motor, built in the Chandler factory for three years past and famous the world over. Free from any hint of experimentation.



The Most Beautiful of all the New Motor Car Bodies—Before the Season's Over Any Other Style Will Be Out of Date

THE price of the new model Chandler Six—the leading six—is $1295.

We are *proud* that with steel and aluminum and leather and all other motor car materials so HIGH we cau sell the Chandler at a price so LOW.

Yes, there are lower prices. But there is no price so low for such a car.

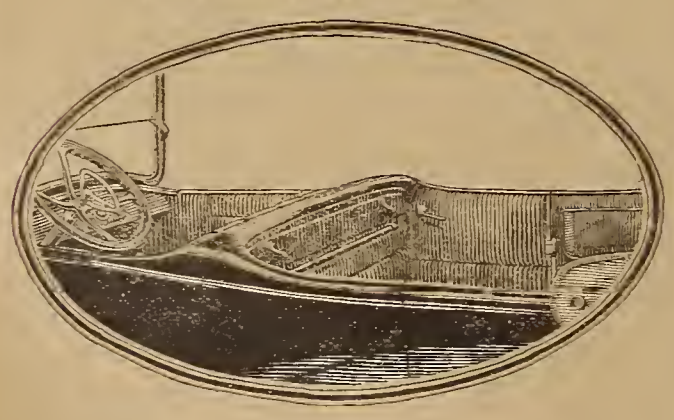
We could build a *cheap* car. That would be easy. But it would be a problem, indeed, to build a *better* car.

We could build a *small* car. But the people, in the cities and in the country, who waut the Chandler want roominess and power and sturdy construction and style.

So we build the best six-cylinder car in the world, and then we fix the price *as low* as it can be made.

This policy has made the Chandler a price-pioneer in the quality six-cylinder field. This policy put on the market three years ago this month the first high-grade six selling for less than $2000,—the $1785 Chandler. This policy reduced that price later to $1595, and this policy brings you now this Greater Six for $1295.

The Walnut-Paneled Tonneau Cowl



INTERESTING CHANDLER FEATURES

EQUIPMENT — Highest grade equipment is a feature of the Chandler now, as always, including Bosch High Tension Magneto, Gray & Davis separate unit Electric Starting and Lighting System, Chandler aluminum crank case, Chandler full floating silent spiral bevel-gear rear axle, silent chain drive for motor shafts, annular ball bearings, Stewart-Warner magnetic speedometer, Stewart vacuum gasoline feed, non-skid tires in rear and all the usual incidental items.

BODY FINISH—Chandler blue, deep, lustrous finish. Fenders, wheels and motor hood black. Deep cushioned upholstery covered with long-grain semi-glazed leather.

EVERYONE knows the Chandler pretty well now, from the mechanical standpoint. Everyoue knows how the Chandler has made good right from the beginning. The Chandler is almost everywhere in America now. Thousands of them, from coast to coast, in the hands of happy owners. So, we say, you know the mechanical excellence of this car.

And now we want you to know the new Chandler touring body and the new Chaudler four-passenger roadster.

The big seven-passenger car, with uew body, aud walnut-paneled cowl, is simply a delight. Iu grace of line we do not believe there is auy other car to match it. The picture gives you just a hint of its beauty. You must see the car itself to know just how much we mean when we say it is the handsomest car of the year.

Room to Spare—A Comfort Margin

There are a good many automobiles with seats, *but not room*, for seven persons.

The big Chandler is a real seven-passenger car. There's room to spare—a comfort-margin. The seats are wide and tilted a bit, and everyone speaks of the "leg-room."

The interior finish, too, is in keeping with the rest of the car. The deep, pillowy hair cushions, upholstered in the new long-grain leather, the walnut-paneled tonneau cowl and all the other niceties of finish and completeness, reflect our thought for your comfort and your sense of style.

So go now to see this car at your dealer's. He is one of a thousand who have the new Chandler ready for inspection and demonstration, and who can give you delivery at any time you designate provided you place your order now.

The New Chandler Catalogue illustrates the New Big Touring Car, the Four-Passenger Roadster, other body types and all mechanical features fully. If you do not know your Chandler dealer write us today

CHANDLER MOTOR CAR CO., 1901-1931 E-131st St., Cleveland, Ohio

EW

FARM and FIRESIDE

—PUBLISHED BY—

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

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Vol. XXXIX. No. 9 SATURDAY, JANUARY 29, 1916 *Published Bi-Weekly*

When You Build a House

How an Ohio Farmer Gets Value in the Dwelling He Erects

By WILLIAM F. MILLER

THE house of Mr. A. O. Alexander, near Bellefontaine, Ohio, burned in 1913. An architect was called to confer about a new house.

Attending to the duties on his farm and living close to it became a grave proposition to the owner. The idea was conceived to build temporary quarters near the present location. It was then that both Mr. Alexander and the architect fell onto the happy thought of erecting a summer kitchen and shed to be used temporarily. But upon taking the future into consideration it was decided to construct these two rooms as a permanent addition to the house. The owner was so pressed for time that a rough sketch of this part of the residence was made by the architect that day, and that part of the building was erected from this crude drawing. The next day work was begun, and in a few days Mr. Alexander, his wife, and daughter were housed in this two-roomed abode. The flues, which are located between this addition and the kitchen proper, were placed to provide for future needs.

The architect then began planning the actual working drawings for the residence. They were rushed, and in a few days were completed. Bids for the general contract, eliminating certain things which will explain themselves later, were asked for and the contract let.

In a short time afterward the foundation was completed and the studding for the exterior walls pointed skyward.

Care was taken in selecting a contractor who had no other work. The object of this was to rush the construction with all possible speed.

Although the planning of the house was done with the utmost dispatch, the conveniences of modern arrangements were not buried in the haste.

Here is the modern, well-arranged, comfortable house built at a cost of $4,591 for Mr. A. O. Alexander near Bellefontaine, Ohio. This house can be built for $2,861 if less expensive materials are used

Mrs. Alexander had an idea of a first-floor plan where the public highway and barn could be seen from the interior. A little to the left of the center of the library one has a lookout to both. This can be easily accomplished and saves a tired housekeeper many useless steps. When it comes to economy of steps the same thing can be said for the toilet on the first floor.

The lower story is especially well adapted to social affairs. The reception hall, living-room, library, chamber, and dining-room can all be thrown together by connecting double sliding doors.

A large kitchen was not desired. The modern butler's pantry, connecting the kitchen and dining-room, is a most handy place. The average farmhouse not having this makes a large kitchen a necessity. In arranging the butler's pantry the smell of cooking is confined to the kitchen, as it would have to go through two doors to reach the dining-room.

Butler's Pantry Saves Many Steps

IN THE butler's pantry is a spacious, well-arranged case which is a veritable store-room. It has lockers and drawers below. An open space immediately above can be used as a long table. The upper section has three sets of doors, with shelves on the inside where every day necessities can be labeled for the convenience of the cook. The case runs to the ceiling. The last two shelves make it necessary to stand on a chair to reach them. This was done for two reasons: If the top of the case did not touch the ceiling, it would have become a general catch-all for dust. The other object was to utilize all the space available, and the upper shelves make an admirable space to store things.

Hereafter, in referring to any branch of work or material, it must be remembered that only the very best was used.

The foundation was built of concrete. The entire cellar floor is cement, and consists of the spaces under the reception hall, living-room, library, and chamber. The boiler-room for the hot-water heater is beneath the living-room. The flue for the heater was built in connection with the fireplace.

All chimneys are lined from top to bottom with hollow terra-cotta, and are topped out above the roof with common red brick of a uniform color.

The old cistern was used, and all downspouts from the house connected with it for soft water to the bath-room, toilet-room, and kitchen.

All roofs were sheathed tight with tongued and grooved boards. The main roof and all porch roofs are covered with unfading black slate. The roof over the summer kitchen and the shed is tin.

The cornice has a projection of three feet—a very good feature, as in case of leaks in the gutters water cannot run down the walls. All gutters are made of a heavy-gauge galvanized iron, and are braced every two feet. This makes them stiff enough to place a ladder against them without crushing the design.

All glass is best quality double strength. Polished beveled plate glass is used in the front entrance. The exterior of the house was painted three coats of white lead and oil.

There is oak finish in reception hall, living-room, library, and dining-room. The rest of the house, except bath-room, is finished in yellow pine. White-enamel finish covers the woodwork of the bath-room.

The dining-room, library, and living-room have hardwood borders of oak thirty inches wide. The fields within the borders are yellow pine. Floors of reception hall and stair landing are all oak. All oak floors were filled and waxed two coats. The balance of the house, except attic, has yellow pine flooring, which was planed, scraped, and waxed. The attic is floored with tongued and grooved yellow pine, but the grade is not as good as the rest of the flooring.

There is not a carpet in the house. All of the floor coverings are rugs. This cuts down house cleaning to a minimum.

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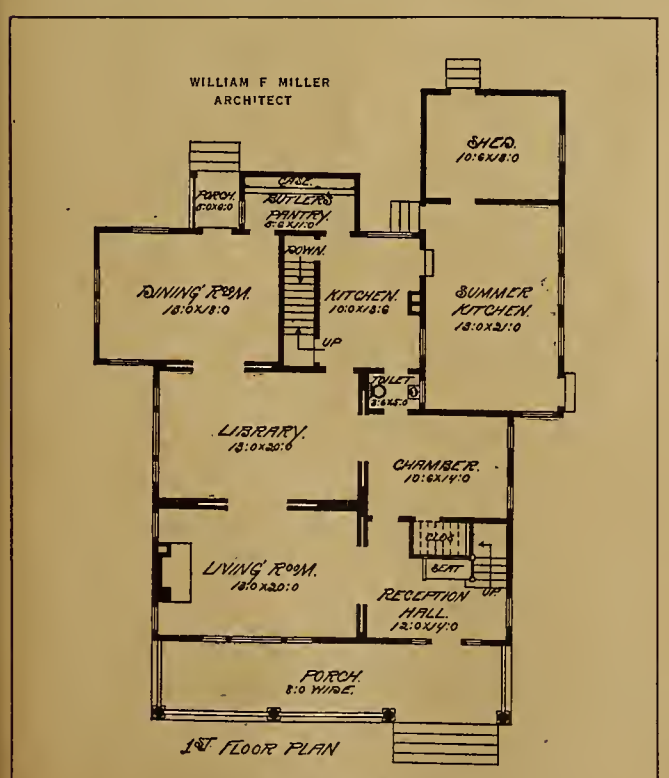
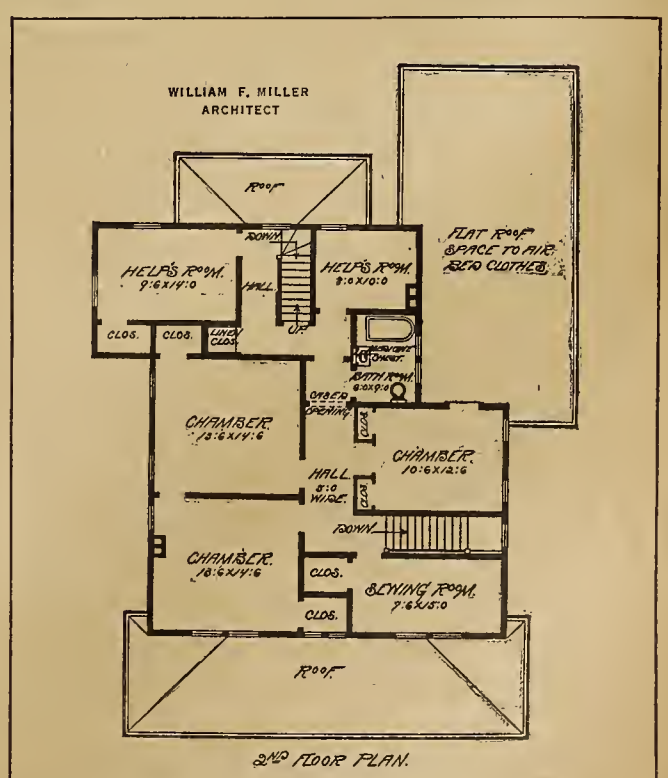


One can sit in the library and see both the public highway and the barn



The bath-room is conveniently located near all of the second-floor bedrooms

E-W

Sunlight for the Hogs

Iowa Community Plan Provides Ideal Building for Swine

By W. G. KAISER

WARMTH, dryuess, aud an abuudance of fresh air and direct suulight are requirements that stand out preëminent in the problem of proper housing of swiue. Durability, economy, and couvenience are the determining factors in hog-house coustruction. All of these qualities, and mauy more, are found in the Iowa sunlight community hog house.

This hog house differs from other houses chiefly in its method of lighting. Two continuous rows of skylight sash on either side of the gable roof, and extending the entire length of the building, allow two broad bands of suulight to flood every part of the interior of the house at the same time during the day.

The hog house must extend in a north and south direction to secure the best results in lightiug. In the early days of the farrowing month March, the morning suu pours through the skylight ou the east side of the roof and enters the west row of peus. About the middle of the forenoon the sun rises over the edge of the roof and begins to shine through the skylight on the west side of the building. From this time until the middle of the afternoon two solid bands of sunlight move across the entire floor from west to east.

The plan of the new hog house consists of two rows of 6x8 feet pens, one on each side of an eight-foot driveway, making a building 24 or 25 feet wide. The length of the house will be governed by the number of pens desired. A 60-foot house will contaiu ten pens on each side.

The Iowa sunlit community house as built at Ames, Iowa, has hollow clay walls five feet high. Frame construction can be employed as well as the more permanent and satisfactory masonry constructiou. The hollow-tile blocks are laid on edge, making a wall five inches thick. All door and wiudow frames and plates are made of reinforced concrete, insuring a perfectly tight wall. The roof is covered with a reliable brand of three-ply prepared roofing laid on matched sheathing supported by 2x6 rafters spaced three feet apart. The roof is made from one and one-fourth pitch, so that the building cau be kept as low as possible. The total height of the building need not exceed 12 feet. In general, it is safe to say that the lower the hog house is the warmer it will be. In the Iowa hog house it is unnecessary to provide a large volume of air to supply the animal with fresh air.

Ventilation in the Iowa hog house is of a positive uature. There are no cracks between the door frames and adjoining walls, or loose boards, where air can enter. The building is equipped with galvauized iron ventilators having adjustable dampers. Fresh-air intakes are provided in the side walls by omittiug a top row block every 12 feet, and then covering the opening with an adjustable door hinged to the roof. Besides this every one of the skylight sash are hinged, and can be raised any height desired by a conveniently placed sash adjuster.

The floor of the Iowa hog house, although of masonry construction, is nevertheless quite warm and dry. The floor under the pens consists of a 1½-inch layer of concrete over 4x8x12-inch second-grade clay blocks laid flatwise. Uuder the clay blocks is a four-inch layer of sand and gravel. The clay blocks placed beneath the concrete go far toward makiug the masonry floor warm and dry.

Drains Carry Off Liquid Matter

MOREOVER, the building has a complete system of drainage. A cellar trap is placed at the inside corner of each of two adjacent pens. The floor of the pens is given a slope of one-fourth inch to the foot toward the trap. Vitrified sewer tile, leadiug from the trap, carry the liquid matter away from the building.

Convenience of haudling the swine has not been neglected in the Iowa hog house. Each pen has a small outside door that can be opened or closed from the driveway. Each pen has a small gate entrance from the driveway. All pen partitions and panels are readily removable. Provision has been made so that the driveway can be partitioned off in case of emergency. Iu fact, the house can be made into pens of almost any size or shape. The north end of the building can be used for a storage place for feed and bedding. The labor in caring for the swine is reduced to a minimum in this sunlight type of hog house.

The safety of the animal has been considered in the design of the sunlit hog house. Every pen is equipped with life-saving pig fenders. All the small doors are high and roomy. The concrete floors are finished with a wood float, making them smooth aud yet not slippery. The many doors aud gates, conveniently located, make it possible to move the sows at farrowing time with the least possibility of injury.

Iu cost the Iowa hog house compares favorably with any other type of up-to-date hog house. The cost will vary from $25 to $40 a pen, depending upon the grade of materials used and the amount of equipment installed. When the years of service are taken into account that this practically indestructible house is bound to give, the cost of the Iowa sunlit community house is even less than the cost of the hog house of frame construction common to the corn belt.

MASONRY—		
65 bbls. Portland cement @ $1.60	$104.00	
45 cu. yds. sand and gravel @ $1	45.00	
1200 4″x8″x12″ hollow clay blocks for floor, second grade, @ $30 per M	36.00	
800 5″x8″x12″ hollow clay blocks for wall, selected, @ $50 per M	40.00	
84 common brick for corners	1.00	
2 bbls. lime @ $1.25	2.50	
140 pcs. 4″ sewer pipe @ 7½c	10.50	
10 pcs. 4″ sewer pipe Y's @ 30c	3.00	
		$242.00
STEEL AND REINFORCING—		
120 pcs. ¼″x12′ twisted sq. bar reinforcing @ $2.30 per cwt	$7.11	
20 pcs. ½″x12′ twisted sq. bar reinforcing @ $1.80 per cwt	3.66	
25 pcs. ¼″x2″x12′ mild steel bars for fenders @ $1.80 per cwt	8.75	
20 pcs. ⅜″x¾″x6″ mild steel door catches @ 10c	2.00	
20 pr. 6″ strap hinges @ 15c	3.00	
6 pr. 4″ T hinges @ 10c	.60	
20 pr. 8″ screw hooks and strap hinges @ 30c	6.00	
		31.12
LUMBER—		
6 pcs. 4″x4″x16′ No. 1 fir center posts @ $34 per M	$4.35	
10 pcs. 2″x6″x12′ No. 1 Y.P. girders @ $28 per M	3.36	
42 pcs. 2″x6″x16′ No. 1 Y.P. rafters @ $28 per M	18.82	
20 pcs. 2″x4″x16′ No. 1 Y.P. fenders @ $28 per M	4.48	
4 pcs. 2″x6″x18′ No. 1 Y.P. sash holders @ $30 per M	2.16	
4 pcs. 2″x6″x14′ No. 1 Y.P. sash holders @ $28 per M	1.57	
80 pcs. 1″x8″x14′ No. 2 W.P. shiplap for sheathing @ $38 per M	28.38	
80 pcs. 1″x8″x18′ No. 2 W.P. shiplap for sheathing @ $40 per M	38.40	
20 pcs. 1″x6″x12′ No. 2 W.P. board cross ties @ $38 per M	4.56	
36 pcs. 1″x6″x16′ No. 2 W.P. D. & M. for doors @ $38 per M	10.94	
3 pcs. 1″x8″x18′ No. 2 W.P. board door cleats @ $40 per M	1.44	
7 pcs. 1″x6″x16′ No. 2 W.P. board door cleats @ $38 per M	2.13	
12 pcs. 1″x4″x16′ No. 2 W.P. board door cleats @ $35 per M	2.24	
18 pcs. 1″x8″x16′ No. 2 W.P. board partitions, gates, etc., @ $38 per M	7.29	
44 pcs. 1″x6″x16′ No. 2 W.P. board partitions, gates, etc., @ $38 per M	13.38	
14 pcs. 1″x8″x12′ No. 2 W.P. board partitions, gates	4.26	
16 pcs. 1″x6″x12′ No. 2 W.P. board partitions, gates	3.65	
30 pcs. 1″x4″x14′ No. 2 W.P. board partitions, gates	4.90	
10 pcs. 1″x10″x16′ No. 2 W.P. board for forms @ $38 per M	5.07	
10 pcs. 1″x4″x16′ No. 2 W.P. board for forms @ $35 per M	1.86	
10 pcs. 1″x8″x16′ No. 2 W.P. board for forms @ $38 per M	4.05	
12 pcs. O. G. battens 16′ long @ $1.10 per 100 lin. ft	2.11	
		169.40
HARDWARE—		
3 doz. No. 6 wire screw eyes @ 10c	$0.30	
1 gross No. 11 F. H. Bt. screws 1¼″	.25	
20 6″ chain bolt locks @ 50c	10.00	
4 sets bird-proof door hangers @ $1.50	6.00	
32 ft. BP. track @ 14c	4.48	
10 lb 20d nails @ 4c	.40	
15 lb 10d nails @ 4c	.60	
50 lb 8d nails @ 4c	2.00	
120 ⅜″x3″ mach. bolts @ 10c a doz	1.00	
108 ⅜″x2″ mach. bolts @ 10c a doz	.90	
72 ¼″x1½″ carriage bolts @ 10c a doz	.60	
38 ½″x12″ mach. bolts @ 4c	1.52	
10 pr. 3″ butts @ 10c	1.00	
		29.05
MISCELLANEOUS—		
17 sqs. 3-ply prepared roofing @ $3.70	$62.90	
6 4-light barn sash 9″x12″ glass @ 75c	4.50	
2 18″ galvanized ventilators @ $8.50	17.00	
38 skylight sash 3′x4′ @ $2	76.00	
38 pr. 3″ galvanized butts for sash	1.65	
10 collar traps 9″x9″ @ 50c	5.00	
1 gal. ready-mixed paint to double coat 250 sq. ft. @ $2 per gal	2.00	
		169.05
Total cost of materials		$640.62
Labor estimates		200.00
Total estimate of cost		$840.62

The Iowa sunlit hog house costs from $25 to $40 a pen, depending upon the grade of materials used and the amount of equipment installed. It differs from other houses chiefly in its method of lighting

To Light a Farm

Missouri Man Uses Acetylene Gas

By W. R. SCHOOLER

EVERY man owes it to his family and to the general community to make his home as comfortable as he is able to afford. And there is no greater inducement to keep the boy aud girl of the present generation on the farm than to show them that the life there needs to be no more of a hardship thau anywhere else. By trying to do without reasonable conveniences we cripple ourselves as well as those about us.

How much more satisfactiou there is in lighting our homes with gas aud electricity thau with the candle of our grandfather's time or the kerosene lamp of our own!

There are many new systems for lighting couutry homes, but I have had experience only with acetylene gas, having used it eight years, for illuminating purposes, ou my farm in Jasper County, Missouri. It makes a good light at a reasonable cost.

My plant, installed, cost me $150. That included the piping of the house but not the fixtures. The price of the latter depends entirely upon the kind used. My house was piped for gas after it was built, but no damage was done either to the floors or the walls, and all the pipes were concealed.

It was necessary to remove a board to notch the sleepers where the pipes were laid crosswise of them, but where they were laid lengthwise no board had to be removed. Measurements were taken aud the pipes ruu out to the desired point aud connected with the chandelier through a hole bored in the ceiling from below. In two or three places installatiou was a little difficult. A square portion of the floor had to be removed, but where this was put back again it can scarcely be noticed. To reach the third floor the gas pipe goes up through a closet.

Laying the pipes for the second floor was very similar to laying them for the first, but to light the third floor, which is one large room, side lights are used and the pipes are concealed in the partitions. To install the pipes for 30 lights took a plumber three days. Except to buy burners, I have had no repair expense.

The 100-light capacity machines are charged with 100 pounds of carbide, costiug $3.75. One charge lasts from three to four months, dependiug upon how much the lights are burned. To charge the plant takes about thirty minutes. The residue must be taken out of the generator and fresh water put in. Then the carbide goes iuto the hopper.

I have only to turn a faucet to let the water into the generator, but as my plant is in the basement of my house and there is no drain, the residue must be carried out iu tubs.

Place Machines Out of Doors

ONE kind of outside machine is buried in the ground with a casing of cement around it, and another has an outer tauk insulated by frost-proofing materials to keep the water in the generator from freezing. This plaut may also be banked if the winters are severe.

The different systems of lighting with acetylene seem to be very similar. The gas is made as it is used by means of a measured amount of carbide dropping automatically into the water. The gas then passes to the gas bell, aud from there it goes iuto the pipes.

There is now an electric attachment to put on burners which has proved to be quite a success. It ignites the gas without the use of a match. Lately we have tried one of the new friction attachments which makes a spark and ignites the gas. This is very successful.

Air sometimes gets iu the pipes when the fresh charge is put in if all the gas has been used. I overcome this difficulty by lighting burners during the day.

To care for the acetylene plant is a man's work, the carbide being pretty difficult to handle. Thus the women are deprived of one of their tasks, but I have heard no complaints.

E.W

Avoiding Barn Mistakes

What the Recent Experience of Satisfied Builders Shows

By B. D. STOCKWELL

A MAN who writes jokes for a living says the difference between farming and agriculture is this: For farming you need land, buildings, implements, and stock, while for agriculture all you need is pencil and paper. But from the experience of some farmers who have built good, poor, and indifferent barns, I should say that you need pencil and paper in practical farming as well as in agriculture.

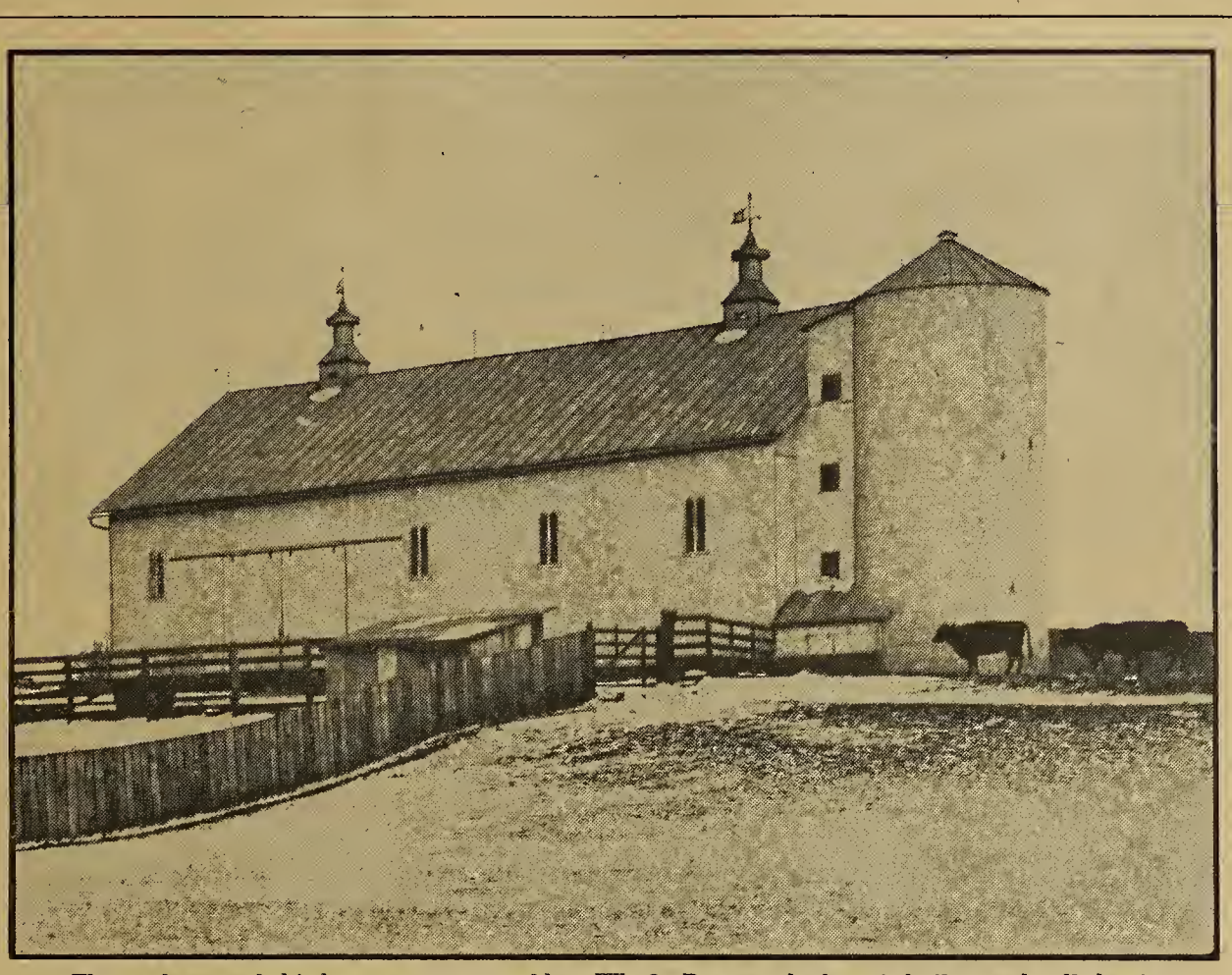
Regrets eat all the joy out of life, and when you spend your money for a needed improvement you want it to suit you when finished. Draw your plans on a good-sized sheet of paper and then imagine yourself doing the work on the plans as they are laid out. Put the plans aside a while and then examine them again. Repeat this until you're pretty certain you haven't made a mistake. For remodeling is expensive, and there are some mistakes that you can't correct easily.

An attractive new barn on the farm of H. E. Myers near Springfield, Ohio, measures 42x80 feet, has 20-foot posts, and is close to 35 feet high from bottom of foundation wall to peak of roof.

Situated on a high knoll, the barn has excellent drainage in three directions. From the fourth there is a roadway from which you can drive onto the haymow floor of the barn. There is a center-hoist hay-carrier system for storing away the estimated mow capacity of 120 tons. To the left of the driveway, as you enter, is storage space for farm implements. Near-by is the usual boxed chute for throwing down hay, also a stairway leading down to the first floor.

The basement doors open directly onto a feedlot. About one half the basement is devoted to feeding space, with racks and manger accommodations for 42 head of young stock. The remaining down-stair space is occupied by seven horse stalls, nine cow stalls with stanchions, two box stalls, and several passageways. At the south end of the barn, and connected with it, is a hollow-tile silo of 140 tons' capacity. An overhead track and carrier provide for the easy handling of silage.

"I don't blame men for grumbling about their work," Mr. Myers remarked, "if they haven't anything to work with. You can't expect a man to do his work cheerfully or well unless he has something to work with. The stock won't do well either. Why, I've seen barns with cracks big enough to throw a cat through, and then folks wonder why they don't make money!"



The yards around this barn are never muddy. Why? Because the barn is built on a knoll that is well drained, and the roof of the barn is guttered

Saves $600 on the Lumber Bill

THERE is no such thing as a model barn, because a barn should be built to fit the requirements of a farm, and no two farms have exactly the same requirements. The Myers' barn cost $3,500, and at that, $600 was saved because the oak and hickory framing lumber came from the farm woodlot. But the man who owns and uses a barn is the first to find out its faults, and this barn has several.

It is 25 rods from the house, and in the short time (one year) since it was built this distance has proved too great.

"I should have put it over there," Mr. Myers remarked, pointing to a nice building site about 12 rods nearer the house. "Too much time is lost in going back and forth, and a horse could kick his stall to pieces and die without anyone at the house hearing him. Then, if I built again I'd make the barn 20 feet longer and 10 feet wider. It isn't big enough for a 268-acre farm like this."

Building barns too small is a common mistake, especially on dairy farms. This is due mostly to building for immediate needs instead of looking forward to a natural increase in the size of the herd. More stock means not only more stable room but a demand for a larger storage space for hay and grain. Lean-to additions, ells, and sheds adjoining barns are every day testimony to the mistake of building too small at first.

Mr. Myers has no regrets, however, about one of the most important things a stock farm can have—a good water system. The roof of the barn waters all the stock. The entire roof is guttered and the rain water is stored in a 500-barrel cistern just in front of the barn at the top of the knoll. Pipes from this cistern supply two large concrete and a smaller iron watering trough. The supply can be regulated by an independent faucet at each trough. Should the rain water ever give out, there are springs on the farm that can be used for watering. The barn has a standing-seam galvanized iron roof which is thoroughly satisfactory, also modern metal ventilators. This form of ventilator, being bird-proof, has now nearly banished the old-style wooden cupola from popularity.

The foundation is solid concrete two feet thick at the bottom and one foot at the top. The foundation walls are eight feet high, and have windows all around, even on the bank side, as the wall was made to extend above the ground far enough to allow for wide windows, though they are narrow up and down.

Another building on which regrets have been few is known as the "apartment house." Its main use is as a double corncrib, with gable roof over all. Between the cribs is a driveway, and double doors are at each end. The carpenter suggested putting the farm scales in the driveway. This suggestion was followed, and it saved the cost of an extra building to house the scales, and the arrangement in no way interferes with weighing stock or loads of grain, as nothing is stored there.

The concrete foundation on the sides of this building sets in about four feet, and piers support the outer sills. This construction makes a long low corridor on each side of the corncrib, and partitions about six feet apart divide these corridors into convenient pens for farrowing. Doors hinged at the top can be let down as a shelter in bad weather, and small yards in front of each pen keep the litters from becoming mixed or being annihilated by next-door occupants. The success of these cubby-holes under a building where the space would otherwise go to waste depends largely on the slope of the land. In this particular case there was good drainage away from the foundation.

But with these improvements, he is figuring on one more: "I'm expecting to put in an electric lighting system, so I can go into my silo, haymow, or stable at night and see what I'm doing."

Remodels a Shed

How a House is Made for the Milk

By E. L. VINCENT

WE HAVE turned the old woodshed out of doors and made the place over into a milk-room. We could do this the better because we have a woodhouse near-by for storing the year's supply of fuel. As we had decided to make butter instead of selling cream, we had to have a good place for the separator and other butter tools.

We carted off the accumulation of chips and other stuff that had been collecting for many years. Then in one end we built up a wall four feet thick at the bottom and three at the top for the engine and separator to stand on. On top of the stones we packed down gravel, and over all laid a coating of cement. To bring the engine up above the floor, we made a board form a foot wide and filled it with cement work. The rest of the floor we laid in hard pine, matched, well supported along through the middle to make it as stiff as possible.

A ceiling of matched stuff was put on the sides and overhead. This will be painted. A couple of windows furnish needed light. The room is near to the well and to the house drain, so that it will save a good deal of work. We may have to build a chimney and set up a little stove in the room for winter work. And if everything goes well, in time we propose to have running water in the house, not only for the dairy-room but for all kinds of kitchen work.

The cost of making this change was not very great, as we did the work ourselves.

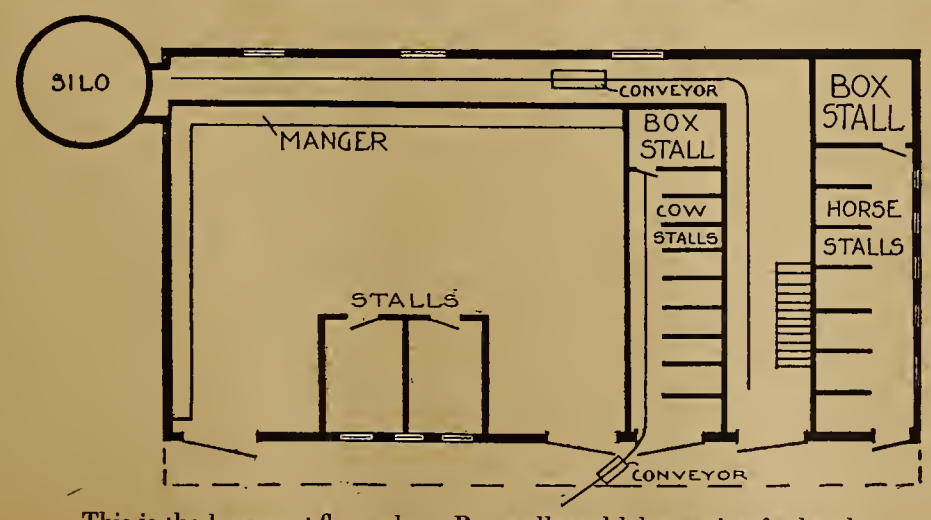
The room looks nice—it is nice—and we did it, which is very much worth while.

Home-Sawed Lumber

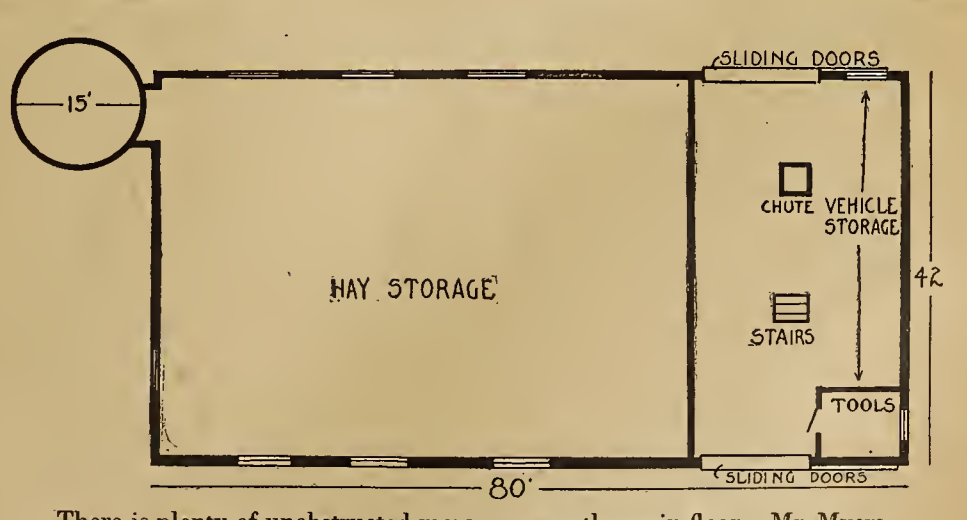
By DAVID PORTER

ONE of our neighbors, an old sawmill man, rented a mill last spring for several weeks just before the active spring work was started. By having each customer present when his own timber was sawed, the sawmill man was obliged to pay wages to only one man. Hence the sawing was done at a low price.

He expected to make enough to pay the rent of the machine while sawing a considerable amount of lumber for his own use. But he made several hundred dollars, and the neighborhood found itself greatly benefited. Everyone was surprised at the amount of timber to be found in a supposedly sparsely timbered section. There must be other communities where someone is enterprising enough to bring in a mill.



This is the basement-floor plan. Box stalls and labor-saving feed and manure conveyors are provided



There is plenty of unobstructed mow room on the main floor. Mr. Myers can drive in on the main floor with hay

EW

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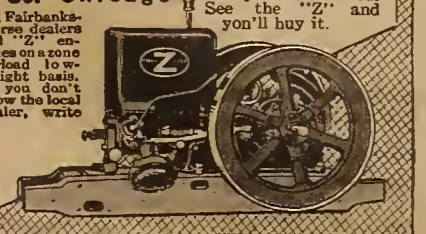

The Editor's Letter

When a Farmer Loses Money on Fruit Trees

A FRIEND of FARM AND FIRESIDE in Tennessee has taken the pains to write me an eight-page letter made up of business philosophy, mostly on the subject of buying fruit trees. Nowhere in the letter does he ask for assistance, nor has he any new plan to unfold. It is rather a pouring out of self-censure, and he simply asks that his experience be a warning to fellow readers of FARM AND FIRESIDE.

"DEAR MR. EDITOR: I would like to speak a word concerning my fruit trees," he begins. "We moved to this farm four years ago and, finding part of the land well suited to fruit-growing, we bought a bill of peach trees from an agent representing a nursery which 'sells at a great saving price to the buyer.'

"We planted and pruned and sprayed our trees, and were rewarded by seeing a heavy bloom and later a good set of fruit. We felt that we were about to be rewarded for our self-denial of spring and fall hats, new clothing and other things we had gone without. Some of our neighbors began selling peaches at a fair price, but ours were not yet ripe, although we had ordered an assortment of trees.

"In August they all ripened at once, and proved to be a lot of worthless seedlings budded in every way to make the trees appear on delivery to be good budded fruit. We investigated the nursery, only to find it owned by one man whose property was all in his wife's name, and we could have no recourse. We have learned a lesson in the school of experience, but the tuition is rather high-priced.

"We must now wait another three or four years for fruit, but let's see what benefit we may derive from this lesson. Shall we turn our backs on the agents who come to our doors and blame them? I think not. This agent seemed honest, and offered to help bear my loss as far as his commission will repay it. Let us be fair-minded and take a portion of the blame to ourselves, where it justly belongs.

"When I buy my new trees I shall pay a first-class price and get trees from a nursery that has a reputation behind it and is advertising in a reliable paper. You see I have no recourse in this case, not even on the charge of this nurseryman's using the mails fraudulently, as he does not send any literature through the mails. I shall try to remember that good stock cannot be had for nothing any more than I can afford to sell genuine Elberta peaches at the same price I could get for worthless seedling fruit. The knock-out dose of medicine for the habit of being swindled is this prescription: Read a good paper devoted to your line of business, and then inform yourself as to reliable firms selling the goods you need. If need be, advise with the editor, who might be in a position 'to know a few things' about doubtful firms.

"Be willing to pay a living price for goods as you will expect good prices for your produce when you sell. Remember, many well-known firms are selling at prices no higher than the swindler may ask you for his goods."

The tremendous waste of human experience is one of the saddest things in the world. We can inherit property, money, sound minds and bodies, and even a good name, but we cannot inherit experience. And most of us are miserably poor pupils at learning from the experience of others. We are inclined to flatter ourselves as being exempt from the misfortunes that overtake our fellow men and women, and there is no more foolish and conceited belief.

"Be willing to pay a living price for goods," says our Tennessee friend. That is the real heart of his letter. He admits his mistake in attempting to get a standard article below standard cost. That is why he does not blame the nurseryman, nor even the agent.

There is a certain field for cheap goods in the commerce of the world. Among the semi-civilized races the lowest grades of merchandise answer their needs about as well as any. The world's best newspapers are printed on cheap paper because news by its very nature is worthless in a few hours. But for an investment on which you spend time, labor, and money, a purchase price below market values is the signal to beware.

Four years of time, labor, and expense besides blasted hopes! He will never forget the experience. The rest of us who simply read this may, because we didn't suffer. I am sure it was hard for him to write that letter of self-condemnation and sign his name, and that is why we appreciate it all the more.

The Editor

When You Build a House

[CONTINUED FROM PAGE 3]

Patent plaster with a white finish was used on wood lath for the entire house except in the summer kitchen and shed.

The exterior walls were sheathed tight with tongued and grooved boards. Upon this a layer of heavy building paper was applied. Then they were covered with six-inch redwood lap siding, with 4¾ inches exposed to the weather. The wood used in the front entrance is oak. All other exterior finish is cypress, except the ceilings of porches and soffits of overhanging roofs, which are tongued, grooved, and beaded yellow pine.

The house has a complete hot and cold soft-water system of plumbing, which is connected to bath-room, toilet, and kitchen. This is connected with a gasoline engine which is used also for pumping water for the stock and for generating electricity for lighting purposes. The entire house is wired from cellar to attic. The first and second floors are equipped with modern straight electric fixtures.

The second floor is arranged so each chamber and bath-room can be entered from the hall. The help's quarters can be shut off from the balance of the sleeping apartments by the door just in the rear of the cased opening. A medicine chest was built above the lavatory in the bath-room for drugs and toilet articles. The door has a mirror for a panel.

A very essential feature for advantageons housekeeping is the flat roof above the summer kitchen and shed; the place can be reached by a door in the middle chamber and employed as a means for airing bed clothes.

When the general contract is mentioned hereafter it will mean the excavation, masonry, brickwork, galvanized iron, tinwork, slate roof, painting, glazing, glass, plastering, and carpenter labor. The general contract was let separately from the wiring, lighting fixtures, hardware trimmings, mantel, heating, and plumbing.

The following prices are the amounts of the different contracts. It will be shown how the total cost can be reduced and still adhere to the plan and design.

General contract	$3,200.00
Hot-water heating and plumbing	1,136.00
Wiring	75.00
Lighting fixtures	75.00
Hardware trimmings	40.00
Mantel	65.00
Total	$4,591.00

If you wish, the hot-water heating and plumbing can be omitted. In the place of this kind of heating a hot-air furnace can be installed at a cost of $200. This would deduct $936 on two items. The amount of the wiring and electric fixtures might be taken from the cost, which is $150. Added to these items could be $70 for the cost of the fireplace and mantel. A chimney could be built instead. If desired, the tight sheathing for the slate roofs could be changed to open sheathing and then covered with shingles at a saving of $150. The sheathing and lap siding on the exterior walls could be changed to a method very much in use, by applying paper to the studs and then weather-boarding the house with tongued and grooved double-worked siding at another saving of $150. If yellow pine would be substituted for oak in the reception hall, living-room, library, and dining-room, $75 additional could be saved. The use of yellow pine instead of oak floors and the omission of the planing, scraping, and waxing of pine floors would save $125. The attic flooring could be omitted, but it is not advised. If done, this would save $75.

The amount of the items omitted is $1,731. Deducted from the actual cost, $4,591, leaves $2,860. The result is still a modern, well-arranged plan.

The architect superintended the construction of the Alexander house, and wrote all the contracts.

The house has been used by the Alexander family for more than two years, and in that time has proved its worth. It is practical, it is convenient, and it is comfortable.

FOOD FACTS
What an M. D. Learned.

A prominent physician down in Georgia went through a food experience which he makes public:

"It was my own experience that first led me to advocate Grape-Nuts food; and I also know from having prescribed it to convalescents and other weak patients that this food is a wonderful rebuilder and restorer of nerve and brain tissue, as well as muscle. It improves the digestion and patients gain, just as I did in strength and weight, very rapidly.

"I was in such a low state that I had to give up my work entirely and go to the mountains, but two months there did not improve me; in fact I was not quite as well as when I left home. My food did not sustain me and it became plain that I must change.

"I began to use Grape-Nuts and in two weeks I could walk a mile, and in five weeks returned to my home and practice, taking up hard work again. Since that time I have felt as well and strong as I ever did in my life.

"As a physician who seeks to help all sufferers I consider it a duty to make these facts public."

Trial 10 days on Grape-Nuts when the regular food does not seem to sustain the body will work wonders.

"There's a Reason." Name given by Postum Co., Battle Creek, Mich.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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There are many fine openings in the Railway Mail, Post Office and other government branches for American citizens 18 and over. Let us show you how Mr. Patterson, a former U. S. Civil Service Secretary-Examiner, can help you obtain one of these positions. Booklet 16-T gives full particulars. It's free, without obligation. Write today.

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121 Ohio St., Decatur, Ind.

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Get our new catalog—full of fence and gate bargains. It will save you big money. It tells all about the best farm and lawn fence made—that's

MASON FENCE—GUARANTEED

Yes, every rod guaranteed and sold on 60 days' test. Must satisfy or your money back. See our great 48 in. farm fence for 26c. a rod. Farm gates at $2.95 each. Scores of other great fence and gate bargains. Write today for our catalog; it's Free.

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The Mason Fence Co., Box 86, Leesburg, O.

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HORSE-HIGH, BULL-STRONG, PIG-TIGHT

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26-inch Hog Fence - 12 cts. a rod.
47-inch Farm Fence - 18 cts. a rod.
48-inch Poultry Fence - 24 cts. a rod.
Special Prices on Galv. Barbed Wire.

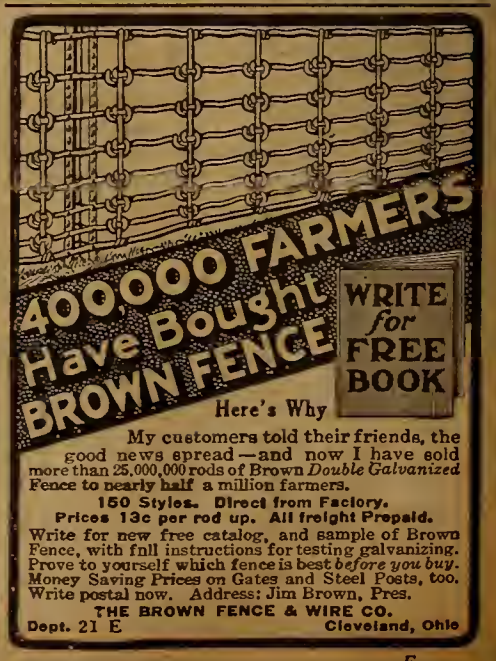
Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. Write for it to-day. It's free.

KITSELMAN BROS. Box 271 Muncie, Ind.

Ornamental Fence

Forty-one inches high at 20c per foot—posts, line railing, silver bronzed ornaments, top braided wire and wire fence filler included. Chicken tight—made from heavy, galvanized wire. Corner and gate posts 3 inches—line posts and line rail 2 inches in diameter. Catalog contains 44 designs of beautiful yard fence. **Full line of Farm, Walk and Poultry Gates,** at extraordinary low prices with a money back guarantee. Get our beautiful free illustrated catalog.

Kokomo Fence Machine Co.
427 North St., Kokomo, Ind.



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My customers told their friends, the good news spread—and now I have sold more than 25,000,000 rods of Brown *Double Galvanized* Fence to nearly half a million farmers.

150 Styles. Direct from Factory. Prices 13c per rod up. All freight Prepaid.

Write for new free catalog, and sample of Brown Fence, with full instructions for testing galvanizing. Prove to yourself which fence is best *before you buy*. Money Saving Prices on Gates and Steel Posts, too. Write postal now. Address: Jim Brown, Pres.

THE BROWN FENCE & WIRE CO.
Dept. 21 E Cleveland, Ohio

E

The greatest corn show of 1915, with the best corn and the biggest cash prizes, was held in this little inland town of Whitesville, Missouri

A typical inland town in northwest Missouri, Whitesville is surrounded by a good farming country. It is fifty miles south of the Iowa line

A Gold Corn Show

Where the Best 10 Ears Win $500; the Best Ear $100

By HENRY FIELD

IT MAY surprise you to know that the greatest corn show of the year, with the best corn and the biggest cash prizes, was held December 6-9, 1915, in a little inland town with a population of 125 persons. Whitesville is a typical little old inland town in northwest Missouri, about 50 miles south of the Iowa line. It is surrounded by a good farming country, probably no better and no worse than the average of northwest Missouri and southwest Iowa, but that, of course, means pretty good. But it has a class of farmers around about that aren't excelled anywhere in the country when it comes to enterprise, enthusiasm, and plain nerve.

About ten years ago they formed an association among the farmers and held a neighborhood corn show. It was a great success. So they held a show again the next year. They have kept on holding bigger and better shows every year.

Five hundred dollars in gold was offered for the best ten ears, any color. One hundred dollars for the best single ear, and so on through the list. Not medals or cups or diplomas, but real cold, hard cash.

And they didn't limit the exhibitors to their own county or State either, but made it open to the world. Nobody barred. Any man in the United States who thought he could grow better corn than the farmers around Whitesville, Missouri, was dared and invited to try it. They were from Missouri and "had to be showed." This was their ninth corn show.

And incidentally, Indiana came over and "showed" them, and won the principal prizes. But the Missourians are good losers, and they all admitted that the Indianians did it by having the best corn, and invited them to exhibit their best corn again next year.

The show was strictly a national one, and exhibits of corn from all over the country were shown. Naturally there were more exhibits from Missouri than from any other one State.

While there have been shows where more corn was exhibited than the last show at Whitesville, it is very doubtful if corn of as high quality, or as much strictly fancy corn, was ever shown before at any of the national shows.

Here are the officers and the principal exhibitors at the Whitesville show. Peter Lux, who exhibited the best ten ears, is standing in the center of the front row. He is wearing a cap

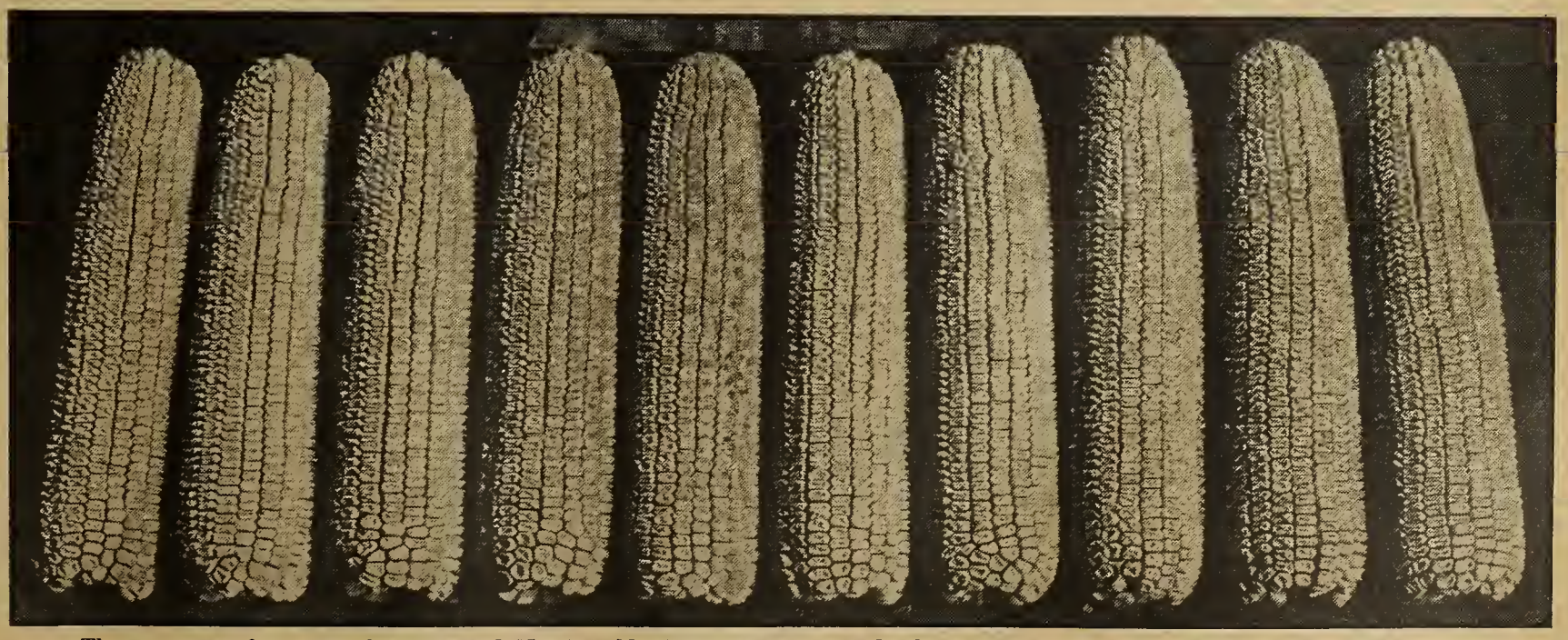
The big contest and the greatest interest were centered on the "ten ears, any color," for which $500 was offered as first prize. The decision went to ten ears of Johnson County White, grown by Peter J. Lux of Shelby County, Indiana. They were undoubtedly the best ten ears of corn ever exhibited in the United States. The ears were practically perfect in shape, color, style, and type, perfect in soundness and germination, had deep, wide wedge-shaped grain and beautiful uniformity. The ears were all exactly the same in size and weight, 10½ inches long, 8 inches around, and 21 ounces in weight. Fifty-three such ears would make a bushel.

Peter Lux is a typical young corn-belt farmer. He has a farm of 73 acres, originally rather poor land, old white clay; but he has brought it up to a high state of fertility with a rotation, manure, and deep plowing. He has drained the entire farm with lines of tile placed eight rods apart. His rotation is wheat, clover, and corn. In 1915 he had 30 acres of corn that made an average of 80 bushels an acre. Lux does all his own work. He has been exhibiting corn at the state and national shows for about ten years. This is the first time he has ever won the capital prize.

The Whitesville people are royal entertainers. With no big town or city to furnish prizes and entertainment, the farmers simply went at it and did it themselves. They were away from the railroad, but they took their automobiles and met all visitors at the trains. They had no hotels, but they took the visitors into their own homes. How they raised all the money for the prizes, I don't know, but they did it.

They wound up the show with a banquet that was a wonder. Just imagine getting up a real banquet for over 600 persons, with no hotels or caterers.

This ear won $100



These ten ears of corn won first prize and $500 in gold. They were grown and exhibited hy Peter Lux of Shelhy County, Indiana, at the Whitesville corn show. The ears were 10½ inches long, 8 inches in circumference, and each weighed 21 ounces

FARM and FIRESIDE
THE NATIONAL FARM PAPER
Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price

One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising

Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.

Advertising rates and regulations furnished upon request.

January 29, 1916

What the Farm Pays

DOES intensive farming pay? Well, what is intensive farming?

Any sensible farmer knows that it does not pay to farm as intensively in this country as is proper and necessary in Japan. Equally, most of us understand that a good deal of farming is done among us which is too much on the cut-and-cover order—not intensive enough. Where is the golden mean, the degree of intensiveness which will bring in the greatest possible returns?

The Office of Farm Management of the U. S. D. A. has completed a survey of one of the best-farmed counties in the United States, Chester County, Pennsylvania. This survey shows that the crop yield produced by intensifying the farming processes rises along with the labor income up to a certain point. After that point larger yields produced by intensive farming are accompanied by a loss in the labor income. In other words, as intensive farming is there practiced, there is a point at which it costs more in labor than it brings in crops.

Where is that point? Are many of us farming too intensively? Not many of us. Loss through intensiveness does not occur on many Chester County farms. Most of the losses arise from too small yields. The survey shows that crop yields may be increased by intensive methods to a point about 40 per cent higher than the Chester County average before intensifying ceases to be profitable.

This lets most of us out. It is safe to say that the farm is a very exceptional one which is so managed as to yield 40 per cent more than the average one in the county in question. We may go on intensifying for some time yet before we need fear that we are growing crops which are unprofitable because of their large yield. They may be unprofitable on account of the aggregate yield of the nation or the world—but that is another story.

Your Money's Worth

BE SURE to read page 10 of this issue, which tells how easily a person may be swindled. The business world has changed a good deal the last hundred years. The old idea was simply to sell the customer something and get his money. It was that greed which permeated the Spanish adventurers when they gave trinkets in exchange for the gold of the New World.

The new idea in business is to give something of value and in return obtain not only a fair price but also the customer's good will.

Reliable goods come under three main classes. First, goods backed by the guarantee of your local merchants—persons you know and trust.

Second, goods advertised in the better class of periodicals.

Third, goods sold by concerns which have a permanent address and can give bank references.

FARM AND FIRESIDE stands back of every advertiser using its pages and guarantees you fair treatment. A swindler, on the other hand, does not intend to give value received and cannot get a reliable publisher to print his advertisement at any price.

Rules for detecting swindling methods and goods are not easy to formulate. Usually the swindler's proposition is one that calls for an immediate decision; he wants you to decide at once before you can think the matter over. Low prices or luring profits are other baits.

One of the best rules is to postpone your decision on a new or doubtful proposition until the next day. As the saying goes, "Sleep on it overnight."

Some Gain, Some Loss

THERE was a time when the Turkish Government imposed the death penalty on persons caught trying to smuggle out of the empire the best breeds of Angora goats. In 1881 a Californian, Doctor Bailey, bought four goats in Turkey, carried them on mules, camels, and in a closed carriage for some hundreds of miles, sheared off their luxuriant wool, rolled them in coal dust to make them look common and disreputable, and escaped with the Sultan's goats and a whole skin. The descendants of these goats are found on ranches in the West and Southwest, crossed with Angoras from South Africa and other parts of the world.

Once the governments of China and Japan guarded with similar jealousy the exportation of the tea plant. Someone escaped with some seed or cuttings, however, some forty years ago, and the original plantation of smuggled tea plants is still flourishing in South Carolina.

Fifty years ago Brazil was engaged in an effort to keep the rubber tree in confinement in that empire. The seed was smuggled to Ceylon, however, and for half a century East Indian planters have been perfecting the rubber tree until now the best plantations are there rather than in Brazil, and the Brazilians who want the best varieties send to Ceylon, Java, and other Asiatic countries for their trees for planting.

The agricultural and breeding explorer is abroad in the world. Nothing which is valuable or pestiferous, one may add, can long be kept any one place.

The Sultan lost his goat, the Mandarins their tea, and the Dons their rubber trees—and in return Brazil has given the Asiatics the plague of the water hyacinth, and the Mongolians have sent us the San José scale, the gypsy moth, and several other pests.

There are at least two sides to the matter of free exchange, but it is one of the most fascinating subjects connected with agriculture.

County Agents and Schools

A WEST VIRGINIA news bulletin tells of the fact that the county agents are finding much to do in co-operation with the rural schools, now that the outdoor work of instruction and demonstration is less. This, in our opinion, is the most important work the agents can do.

It is a pity that every county agent is not also equipped with some training as a school teacher. The two lines of work should approach closer and closer. The attempts made by thousands of teachers to teach textbook "agriculture" are pitiful.

Cannot the county agents do something systematically to show these teachers that agriculture cannot be made vital and real as a book study, but must be taught with reference to the daily problems of life? The county agent is a teacher of agriculture. He must teach it in the fields and on the farms. To try to teach it from books alone would be absurd. Well, it is just as absurd for the rural teacher to try to do it.

The greatest problem for the county-agent movement is to correlate itself systematically with rural education.

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FARM AND FIRESIDE, Springfield, Ohio

Our Letter Box

Growers Try Co-Operation

DEAR FARM AND FIRESIDE: Out here in the great North Platte Valley one of our biggest crops is sugar beets, and we have organized to demand our rights. I am a member of the Farmers' Co-operative Union and also the Farmers' Educational and Co-operative State Union of Nebraska. We are like the Irishman and the bumblebees.

When Pat was ready to mow his red clover it was in full bloom and the bees were plentiful and busy. He was told he would have to kill them or they would sting him to death when he cut the clover. So one morning, with paddle in hand, he got busy and worked hard all day. At night he told his wife he guessed he had killed 2,000 bees, and he thought he could finish them up the next day. In the morning he started where he had stopped the evening before, but as he tried to kill the first bee he stepped in a nest. The bumblebees rose up and put him to rout.

"Oh, Pat, and what's the matter?" his wife exclaimed when he arrived home.

"Sure, the bumblebees got together," he replied, "during the night and talked the matter over and through co-operation they not only put me to flight but put me out of business."

That is what we are trying to do here in Nebraska in the North Platte Valley. We are getting the producer and consumer together in handling our products so as to cut out all unnecessary middlemen. G. B. M. WILL, Nebraska.

Warning to the Boys

DEAR EDITOR: I did not enter in your narrow escape contest, but reading the experiences reminds me of an escape that may be a warning to some boy who drives a team. I was driving a high-lived span of horses with a load of cordwood piled on the sled lengthwise, and was sitting on the wood with my feet hanging over the front end.

The horses wanted to trot down a short but steep hill, and when I reined them in the wood I was sitting on slid forward. I fell across the pole and whiffletrees, with the off horse's feet flying in my face as they dashed away.

Suddenly, in some way that I could never understand, I was shunted head foremost into the light snow beside the road and escaped unhurt.

But doubtless my narrowest escape was when, as a boy of thirteen, I set down a bottle of whisky, of which I had become very fond, and said, "That's the last drop." E. EDGAR HARRIS.

A Debatable Subject

DEAR EDITOR: I have been a merchant's wife, a farmer's wife and, having been born and raised on a farm, a farmer's daughter. I have also been a country-school teacher and a village teacher.

As to whether the women have to work harder in the city or on the farm, I am anxious to debate that subject.

My husband was in business while we lived in town, and this seemed to bring with it so much company that this became one great cause of work and worry. Whenever an old friend or customer came into the store near meal time he was invited home with my husband for a meal or to stay overnight. I soon found that I had to be prepared for company at all times. The meals must be inviting and on time, and the whole house must be kept in apple-pie order.

The children and myself had to dress to receive company at any time. In the country people are not expected to be dressed up all of the time. When company comes and I am at work, I invite them into the kitchen, wash house, down cellar, or even out into the milk yard, wherever my work requires my attention, and no apologies are needed.

Washing and ironing are not such dreadful tasks in the country. Town children are expected to wear white or light clothes much of the time, and this means a lot of hard work.

Women in town must also take their turn in filling offices in the various societies and charitable organizations. All this means work and worry.

I do not think it out of place for women on the farm to help with the milking, feed calves, tend the chickens, and work in the garden. I always consider that my work and like to do it. Besides, being out around in the open air and sunshine gives us better health than our city sisters.

How we enjoy the society of our farmer friends! We have no fears of associating with them, for we are all on the same level and not separated into classes as the city people are.

No! I have tried life in the town and life on the farm. Give me the life of a farmer's wife every time.

MRS. THEDA DEE, Kansas.

Bits of Good Humor

Knocked Out

A youthful physician ha
moned as a witness in a ca
pended on technical evidence
ing counsel in cross-examin
several sarcastic questions
knowledge and skill of so young a doctor.

"Are you," he asked, "entirely familiar with the symptoms of concussion of the brain?"

"Yes."

"Then I should like to ask your opinion of a hypothetical case. Were my learned friend, Mr. Banks, and myself to bang our heads together, should we get concussion of the brain?"

"Mr. Banks might," was the disconcerting reply.

Thoughtful

"My dear, I've an idea," said old Mrs. Goodart to her caller. "You know we frequently read of the soldiers making sorties. Now, why not make up a lot of those sorties and send them to the poor fellows at the front?"—Boston Transcript.

Thwarted

BRIGGS—We are coming around to see you this evening.

GRIGGS—That's right; but do me a favor, old man. Don't let your wife wear her new suit; I don't want my wife to see it just now.

BRIGGS—Why, man alive, that's just why we are coming.

The Reason

KNICK—Did that firm fail to pay its debts?

KNOCK—No; it failed so it wouldn't have to pay them.

Awful!

"Last night Jack tried to put his arm around me three times."

"Some arm!"

Really Cruel

The pessimist was suffering from rheumatism.

"Every bone in my body aches," he complained.

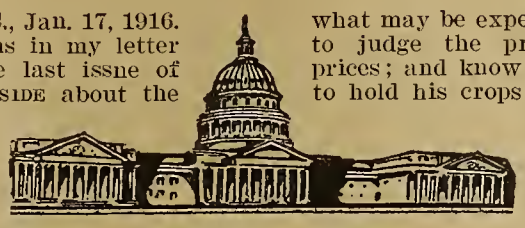
"You ought to be glad you are not a herring," said the optimist.

E.W

The Price of Gasoline

Why a Much-Used Oil May Never be Cheap

By JUDSON WELLIVER



WASHINGTON, D. C., Jan. 17, 1916. SOME observations in my letter published in the last issue of FARM AND FIRESIDE about the advance in the price of gasoline have called forth comment from Dr. Walter F. Rittman, chemical engineer of the Bureau of Mines, about the outlook in this matter. He guesses—and he knows so much about it that his guess must be taken as the best—that gasoline will go right on advancing in price. He says in brief:

"In 1910 there were 350,000 automobiles in the country.

"Now there are 2,250,000.

"A million new ones are added annually, while about one fourth that number are 'scrapped.'

"There are 700,000 gasoline engines working on farms, and 6,000,000 other farms are waiting to buy engines.

"There are about 300,000 motor boats in the country, using gasoline.

"The demand for gasoline is increasing by leaps and bounds. The supply of petroleum is decreasing.

"Before the war we were exporting about 100,000,000 gallons of gasoline annually. Now it is 300,000,000 to 400,000,000, or 30 to 40 per cent of the whole production.

"A year ago the great Cushing, Oklahoma, oil field was producing over 300,000 barrels of petroleum daily; now it is turning out less than 100,000. Cushing petroleum produces a higher percentage of gasoline, naturally, than any other big field in the world. It gives about 30 per cent gasoline under the old processes.

"California produces about 100,000,000 barrels of petroleum annually. Half of this contains no gasoline at all; the other half only about 5 per cent gasoline."

The United States produces about 65 per cent of the world's entire petroleum and gasoline supply.

From these figures it is easy to see why prices go up. There is every reason to expect continued increase of demand; little reason to hope that big new supplies will be opened soon. China, Peru, Mexico, Russia, and other regions have big oil fields, but none comparable to those of the United States are known, and development has been retarded by the war in all those countries.

Still, there's a remedy. Dr. Rittman, inventor of it, explains it thus:

"Petroleum contains kerosene, gasoline, and a lot of other things—all useful. The difference between kerosene and gasoline is simply that the molecules of kerosene are about twice as big as those of gasoline. They are, otherwise, identical; made of the same materials. To make kerosene into gasoline it is only necessary to break the kerosene molecules in two. That's hard to do, considering that a drop of petroleum on the head of a pin contains a billion or two of molecules."

Improves Refining Process

But Rittman found the process to do it. He can get 80 to 90 per cent of gasolene out of Cushing oil. The California oil, which in its natural state has no gasoline at all, turns out 40 to 50 per cent gasoline under Rittman's process. All that's needed is to establish the Rittman system in all refineries—or some other process that will accomplish like results—and the trick is turned. That's what the refiners are beginning to do. The Standard Oil Company has a different process that gets much the same results: a number of independents are installing the Rittman method. A few years will see these processes immensely increase the gasoline product, but if the demand continues to grow the price will hardly drop again. All experts believe the day of gasoline under 25 cents is fast passing, and that much higher prices will prevail, for a long time, at least. Ultimately there must be found some substitute, and alcohol looks most promising. That will be another necessary of life for the farmer to provide.

There is reason to believe that before many years the Department of Agriculture will be able to begin "tipping off" the farmers to the crops that are likely to prove most profitable under the world's general conditions of supply and demand. It would be one of the greatest services possible, but experimenting in such a field would be supremely dangerous.

The monthly crop reports have done much to stabilize market conditions and save the farmer from the manipulations of the speculator. They tell the farmer what may be expected, enabling him to judge the probable course of prices; and know whether to sell or to hold his crops for higher prices.

After this the next step would be to survey the world's stocks on hand, probable requirements, and growing crops as to acreage and conditions, and suggest to the farmer, before he begins planting, whether he would do best by raising more or less of particular crops.

Even now much information is gathered and published in time to help the studious farmer to judge the world's prospective needs. Take wheat. Winter wheat is planted in early autumn. The southern hemisphere turns our schedule of seasons topsy-turvy. It is possible, therefore, for the spring-wheat growers to know at their planting time what the southern hemisphere is contributing to the world's supply, and what the winter-wheat acreage and condition in the northern hemisphere are. From this, judgment can be formed as to whether a big spring-wheat acreage is demanded.

Before the war interfered, the International Institute of Agriculture was fast perfecting its system of universal crop reporting. After the war there will be greater need than ever for world-wide cooperation in such work.

Uncle Sam Studies Markets

Our own Government possesses the most perfect crop-reporting and statistical service in the world. It is the more valuable because this country is the most important agricultural reservoir. In addition, the Office of Markets is making a great survey and establishing an understanding of market conditions, and the Office of Farm Management and county-agent activities are getting the Department closely into touch with the farmers.

But there are real dangers. Suppose a study of world conditions indicated that this country ought to increase its wheat crop 18 per cent in a coming season, and farmers were so advised: there might be a grand rush to plant wheat, with the result that the increase would be, not 18, but 40 per cent. Instead of helping, that would bring overproduction, low prices, and general disgust with governmental advice. The plunge into wheat would cause a shortage in some other things, and in the end these would be high and scarce. Government advice would be made to have guessed the whole thing precisely wrong.

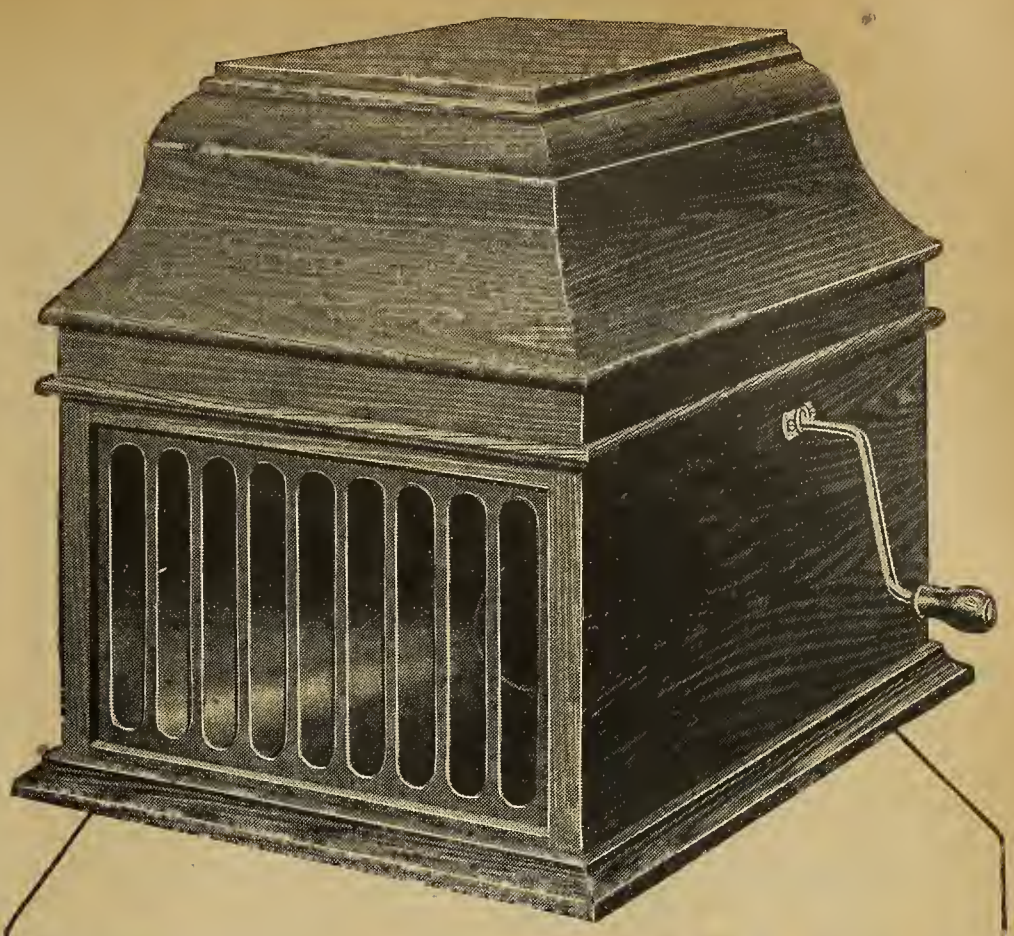
Despite the dangers, there is growing conviction that such an effort at forecasting crops and advising farmers will have to be attempted. The experience of large and small crops alternating, with prices very high when nobody had anything to sell, and very low when everybody had plunged, has been illustrated many times, especially in potatoes. A small crop and high prices tempt too many people to plant potatoes extensively; overproduction lowers the price, and everybody gets out of potatoes as suddenly as they got in; high prices follow, and the pendulum swings the other way again. It is bad for producer and consumer alike.

People who want the Government to try the experiment say that, after all, only a small percentage of farmers would follow the advice given, and that probably this proportion would be just about sufficient to stabilize conditions. The war is distorting agricultural conditions a good deal all over the world, and if some good straight advice could be supplied to farmers to guide them in producing about the quantities the world was going to need, it would be a wonderful help all around.

Heroic methods have been employed in eradicating the foot-and-mouth disease from this country in the last fifteen months, and there has been some complaint of their rigor. Yet they have been justified by results, and it happens that a comparison is now possible with Denmark, which had a particularly violent epidemic of the same disorder, starting almost at the same time.

Denmark was so hard hit by the disease, which was imported from adjacent German territory, that it was impossible to continue killing the animals lest the national supply of stock be gravely depleted. In Michigan, which is about three times as large as Denmark, less than 8,000 cattle were infected; in Denmark, 150,000 hogs and 200,000 cows. In Michigan it cost $218,000 to buy, kill, and bury infected animals; in Denmark a loss of $1,250,000 in milk alone is reported.

E



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The Genuine New Edison Phonograph

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The 96 pages of **Louden Barn Plans** are full of dollar-saving information. It contains 51 representative designs for cow barns, horse barns, combination and general purpose barns, as well as many other designs for hog barns, pens, hay sheds, chicken houses, etc.

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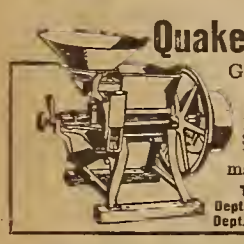

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If you are a farmer, trucker, orchardist, or suburbanite with a kitchen-garden, there is a Planet Jr made for your special need. You can't afford to work without a Planet Jr.

The Wheat Yield Tells the Story

of Western Canada's Rapid Progress

The heavy crops in Western Canada have caused new records to be made in the handling of grains by railroads. For while the movement of these heavy shipments has been wonderfully rapid, the resources of the different roads, despite enlarged equipments and increased facilities, have been strained as never before, and previous records have thus been broken in all directions.
The largest Canadian wheat shipments through New York ever known are reported for the period up to October 15th,

upwards of four and a quarter million bushels being exported in less than six weeks,

and this was but the overflow of shipments to Montreal, through which point shipments were much larger than to New York.
Yields as high as 60 bushels of wheat per acre are reported from all parts of the country; while yields of 45 bushels per acre are common.
Thousands of American farmers have taken part in this wonderful production. Land prices are still low and free homestead lands are easily secured in good localities, convenient to churches, schools, markets, railways, etc.
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Canadian Government Agent.

"How I Was Swindled"

What Grafters and Fakers Do to Get Money

By OUR READERS

Almost Married

First-Prize Contribution

WHEN we were living in Nebraska, ten years ago, our next-door neighbor was an old bachelor, a good-hearted, generous fellow, but terribly anxious to get a wife. Whenever he met an attractive young lady he would build air castles about his future life with her, but that was as far as he ever got.

Finally he decided that Fate was against him. He did not come over as often as usual, and we were beginning to wonder what he was doing with himself. But one morning we heard a quick rap on the door, and when we opened it there stood John, minus hat and coat, but with a newspaper in his hand and a jubilant expression on his face.

"See here!" he cried. "See what I've found!" He pointed to a paragraph under the "Personals": "Widow, 36, refined, educated, wishes to correspond with middle-aged man of moderate income. Object, matrimony. Address A-72, New York Clarion."

"I'll write her!" he exclaimed. "No more of this bachelor business for mine!"

We tried to get him to change his mind, but he hurried home, saying he would write her that very day.

When he received his first letter from her he immediately brought it over to show to us. In the next letter he received her photograph. She certainly was good-looking, and John went into raptures over her. When he could finally tear himself away from the picture he went to town and had one taken of himself to send in return.

The correspondence continued until one day next spring John drove past with a load of lumber, and we asked him what he intended to do with it.

"Build me a house," he replied. "She's coming next month, and I want something better than this old shack for her."

Some time later he came over and told us his plans. It would be too expensive for him to go to New York after her, so she had agreed to come alone if he would send her seventy-five dollars to pay her bills in New York and her traveling expenses.

"Poor little woman!" said John. "She's out of a job and the cost of living is so high there, she says she don't know how she'd have got along if she hadn't found me."

Finally the long-looked-for day arrived when she was to be at our nearest station. Although it was raining hard and her train did not arrive until 1:15 P. M., John put on his new suit and drove the five miles to the station to meet her, at 10:30 in the morning.

It rained hard all afternoon. About eight o'clock we heard a buggy coming down the road. It was John, and he was tired, wet, hungry, and alone. He couldn't understand why she had not come, for he thought he had certainly sent her enough money.

He wrote her the next day, and received a letter the following week from her uncle, who said he knew nothing about the affair, only she had authorized him to answer any letters from John. He said she had married about a week before, and he didn't know where she was now. The letter ended: "I suppose she used your seventy-five dollars for clothes; it wouldn't go far with her."

WASHINGTON.

A CONTEST on "How I Was Swindled" was held recently by FARM AND FIRESIDE. Cash prizes were offered. The letter "Almost Married," written by a Washington subscriber, won first prize. The second prize was awarded to "What I Had Left," written by a Maryland subscriber. Because the letters are so personal we cannot give the winners' names. Other letters telling about swindles will be printed in early issues.

What I Had Left

Second-Prize Contribution

I WAS born and raised on a Maryland farm, was always well paid for the work I did, and had been aided in building up a bank account. But when nineteen years old I decided that the farm was no place for such a bright young man as I. So I left for the nearest large city—Baltimore. There I sought employment, but the business men didn't seem to know a good thing when they saw it, for I sought in vain. Finally I went to an employment agency, and was greeted cordially by a puffy-faced bewhiskered man who introduced himself as J. T. Dove. I paid J. T. Dove a fee of $3, was given two addresses and considerable encouragement, and was told that if not satisfied to return. One address proved to be that of a Greek cigar-maker in the basement of a house on a narrow, dirty, smelly street. The other was a Jewish tailor in a similar location. As neither could speak English plainly, I didn't know whether I was being engaged or not. Anyway, I didn't like the atmosphere and returned to the agency.

Led by the clever questioning of J. T., I revealed to him all my ambitions and told him about my savings. He then said that I was too bright a young man to work for others. I would never get my real worth unless I went into business for myself, and he had something that would just suit me—a mail-order business. The owner, a Mr. Van Dyke, being ill, had authorized him to sell at a sacrifice. I was shown an account book containing columns of names and figures. One of these columns of figures, totaling $350, represented one week's profit from the business, so I was informed.

"A well-established business for only $500!" he exclaimed. "Any other man would jump at it. I let you in on this," he went on to say, "because I knew you would appreciate it. But if you don't want it, another fellow gets the opportunity, only, of course, at a much higher figure. Oh, you shouldn't worry because you have only $200 in cash! You can pay the remainder out of the first week's earnings."

I soon parted with my $200, and had in exchange a little stationery, a few circular letters, an old account book, and a list of cheap magazines.

I didn't like the game and demanded my $200 back. But the oily-tongued J. T. was equal to the occasion. He explained how anxious he was for me to succeed.

The next morning when I arrived at the office I found the door ajar, papers scattered all over the floor, but no one in sight. As I stood staring in bewilderment, a beady-eyed little man stepped up, displayed a badge, and informed me that I was needed to answer questions.

For the next few hours my brain was rather foggy, but I was able to comprehend that J. T. Dove, alias Van Dyke, alias a half-dozen more names, was wanted by the federal authorities for several serious charges, and that I wouldn't be imprisoned if I told all I knew about J. T.

Finally, when I found myself on the street again and my brain cleared a little, I pulled out my return ticket and thanked God that no one had asked me for that. Since that day the farm has been good enough for me. MARYLAND.

Contract $32; Collected $78

A LIGHTNING-ROD agent called on me and insisted on showing me a sample of the rod he was taking orders for. I told him plainly that I did not want the rod, as I could not pay for it at that time. He said it would cost very little to rod my house, and I was not doing my duty by my family unless I did protect them from lightning by having a rod on the house.

This being a tender point with me, I became interested, and asked him what it would cost me, and he replied that by taking the dimensions of the house he could tell exactly. I gave him the dimensions, and he made a calculation, informing me that it would cost exactly $32 to rod my house, and I might have two years to pay this amount, paying $16 each fall. I thought I could pay this small amount, so agreed to take the rods, and signed a paper which he said was an old form of order blank which he was using just because the company had them on hand, and he would erase certain lines, such as charging for balls and points, weather vane and groundings. Also, he would give 50 feet of rod free. He was very nice, indeed; and, thanking me for my order, he took his departure.

Can you imagine my surprise when I learned afterwards that I had signed a very binding contract to have my house rodded at 40 cents per foot, and at that rate the work cost me exactly $78, which, if I refused to sign notes for the whole amount, became due at once. ALABAMA.

E

80% More Power

HUDSON SUPER SIX TRADE NAME REG.

$1375
at Detroit

Efficiency Almost Doubled Without Any Added Size in the

Patented by Hudson
December 28, 1915
Patent No. 1165861

Hudson Super-Six

Costly Cars of Every Type Outrivaled

THESE are facts of overwhelming import to a man who buys a car.

A new invention—called the Super-Six—has proved itself by 80 per cent the best motor in the world.

It has been compared, in official tests, with the finest cars heretofore built. That includes Eights and Twelves. And, against them all, it has won the world's records.

So the Super-Six stands supreme. Not by any minor margin, but by 80 per cent, as compared with like-size motors of the past.

A HUDSON PATENT

This motor is a Hudson invention, secured by Hudson patents. No other car has anything like it. So what this car does is not even approached by any other car in the field.

Please remember that. Last year many cars had motors much alike. Now this one car—the Hudson Super-Six—has an 80 per cent better motor. And the results of that supremacy mean everything to you.

IT HAS 76 HORSEPOWER

This motor is a small, light Six. The size is identical with last year's Hudson Six-40.

But old-type motors in this size yielded about 42 horsepower at their best. The Super-Six delivers 76 horsepower.

Just consider what that means. Think of almost doubled power without added size.

Think what vast reserve power. Hills are climbed without effort. The hardest roads are easy. You can creep on high gear. You can pick up instantly.

BIRD-LIKE MOTION

What we have done by this invention is to end vibration. We have built the smoothest-running motor ever known.

All this 80 per cent of added efficiency is power that was heretofore wasted. It was consumed within the motor.

So that means vast fuel economy. It means almost no engine wear. It saves your tires by saving jerks. It means a saving in these ways of hundreds of dollars.

And riding is like flying in this Super-Six. You never knew such luxury of motion. The car is so quiet that it seems to move by magic.

No more power is created than in former like-size motors. No more fuel is consumed. But you get 80 per cent more efficiency from it by this saving in vibration.

YOU WILL WANT IT

Once ride in the Hudson Super-Six and no other car will content you. You will laugh at a car about half as efficient, with a motor just as large.

The vast reserve power, this smoothness, this flexibility multiply the joys of motoring. And the luxurious bodies—the finest you have ever seen—make the car look its supremacy.

Yet, with all these advantages, the Super-Six is an economy. We are building this season $42,000,000 worth. This matchless output in a fine car gives you a value heretofore unknown.

This enormous saving in fuel, in engine wear and tires amounts to vast sums in the long run. A car without this motor, sold at half the Hudson price, might cost you more than this.

Let the nearest Hudson dealer prove these facts to you. Go riding with him. See the luxury of the Super-Six. When you do that you are bound to want this car.

7-Passenger Phaeton, $1375 at Detroit
Five Other Styles of Bodies
Ask for Our Super-Six Catalog

HUDSON MOTOR CAR COMPANY
Detroit, Mich.

World's Records Broken

All Records up to 100 Miles

Made at Sheepshead Bay under supervision of American Automobile Association, with a 7-passenger stock car Super-Six. Breaking all stock car records for any size, or any price, or any number of cylinders.

100 miles in 80 min., 21.4 sec., averaging ***74.67 miles per hour,*** with driver and passenger.

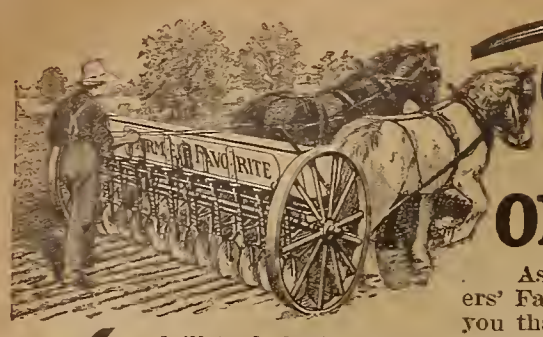
Previous best stock car record was made with a multi-cylinder car carrying driver only.

75.69 miles in one hour with driver and passenger.

Two laps made at 76.75 miles per hour.

Standing start to 50 miles per hour in 16.2 sec. A new record in quick acceleration.

HUDSON SUPER SIX



Over 50 Yrs. of SUCCESS

Ask any farmer who owns a Farmers' Favorite Grain Drill and he will tell you that it would be impossible for any drill to do better work; that it will sow any seed from grasses and clovers to bush lima beans; that it puts the seed in the ground at an even depth; that the seed is covered right; that it is exceptionally well built, strong, simple, easy on both man and team; that repair cost is small; that it does all claimed for it.

There is Made a Farmers' Favorite Drill for Every Need

Investigate the merits of the Farmers' Favorite Plowfur Single Disc; opens an extra wide seed furrow; scatters the seed evenly the entire width; more plants to the row; less waste space between rows; a better stand and fewer weeds. This is only one of the many exclusive patented features used on Farmers' Favorite Drills. These Drills are made in both grain and fertilizer styles and in every size.

Send for Farmers' Favorite Catalog. Read it, then go to your implement dealer and insist on seeing the drill that is sold under a warranty that means much to you.

The American Seeding-Machine Co., Inc. **Springfield, O.**

For silo owners

Study ensilage filling machinery now. Read up on the Blizzard—the original "blower" cutter. Small engine runs it—no silo too high—feeds self—a work-eater—simple, safe, durable. Write for (1) "Making Silage Pay Better." Full of pointers on Silos and silage; tells what to grow, how best to fill silo, feeding methods, etc. (2) Blizzard Catalog, and (3) "What Users Say" also free on request. Which of these books shall we send you? Write us.

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To get the safest, best holding, easiest driving nail you must insist upon "The Capewell." The Trade Mark makes its identity easy.

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will make your old farm wagon as good as new. Save money because they never need repairs. Write for our big free book telling all about them and how they pay. Empire Mfg. Co., Box 768, Quincy, Ill.

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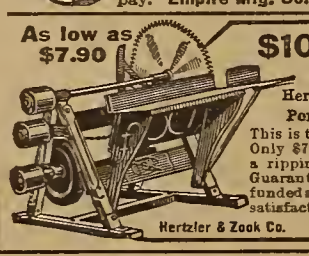
As low as $7.90



$10,000.00 Backs This Hertzler & Zook Portable Wood **SAW**

This is the cheapest saw made. Only $7.90 saw frame to which a ripping table can be added. Guaranteed 1 year, money refunded and all charges paid if not satisfactory. Write for catalog.

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NOTHING EQUALS GREEN BONE. Cut it with a STANDARD IMPROVED 1914 PATENTED BONE CUTTER and get the best egg-making food for almost nothing. Runs easy, cuts fast, and is durable. 1914 Model excels, cuts the bone across the grain. Warranted the best made. 12 sizes for hand and power ranging from $6.75 to $195.00.

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Sprains
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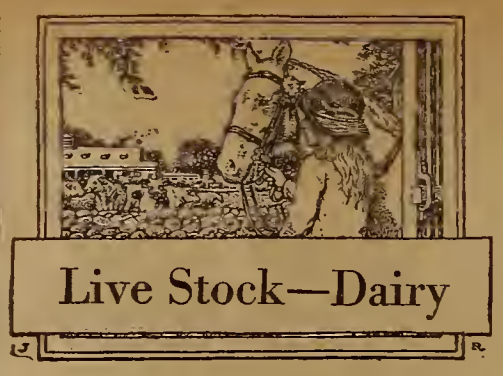
SLOAN'S LINIMENT

Penetrating
Antiseptic
25c. 50c. $1.00

"One application gives Immediate Relief"



Live Stock—Dairy

Succeed in the Breed

"I AM thinking of crossing Holsteins with Polled Durhams," wrote a man the other day. "Would you advise it?"

It was a question that showed this man was giving thought to the matter of breeding. He did not say what his purpose was nor what kind of stock he was trying to develop. Presumably, he hoped to combine the good qualities of both the Holstein and the Polled Durham breeds. We advised him not to try it.

None of the prominent breeds of farm animals have been the direct result of crossing established breeds. On the contrary, most of them have been developed from blends of three or more breeds or families of live stock. This takes years and years of the most skillful work, and even then results are doubtful. A more profitable undertaking is to work with a strain of an established breed without going outside of the breed. By careful selection of parent stock you can rapidly secure the desired improvement.

Fall Colts and Calves

WE HAVE inherited from our ancestors the idea that spring is the time for calves and colts. But the most practical dairymen now know that cows which freshen in the fall are apt to make them more money than the ones which come in in the spring. The succulent pastures of May and June cause a great flow when milk is cheapest; and the usual August drought cuts down the yield so early in lactation that the loss in getting the cow back or trying to do so is great. When milk is dearest the cows are drying up. But the fall freshening cow, when comfortably housed, gives her full yield in the winter when milk is scarce. Just as she begins to need crowding to prevent a shrinkage in her yield, the spring grass comes on and gives her the required boost. The August drought strikes her about the time she ought to begin to dry off anyhow. But fewer realize the arguments for the fall colt. The dam of a colt dropped in October has the entire winter of leisure to devote to the duties of maternity. She is off work when the drain on her vitality is greatest. If the colt has warm quarters at night and during stormy weather he will do as well as he would in summer. When he is weaned, the grass is ready for him. He has more vitality to devote to flies and mosquitoes. Some mighty good horsemen think the fall colt is the only colt for them.

"Free Choice" Hog-Feeding

A GREAT experiment is in progress in Iowa to find out the best system of feeding hogs. John M. Evvard of the Iowa Experiment Station has charge of it, but he is letting the hogs do most of the experimenting.

The purpose of it all is to find out the hog-feeding system that pays best. It is a dry-lot experiment, and as all winter feeding is practically dry-lot feeding the profit and loss side of winter feeding is really under test. Incidentally, three well-established feeding standards are also on trial. These are the Wolff-Lehmann, the Kellner, and the Dietrich standards. The first two are German and the third an American system.

This shows the "free choice" system of feeding hogs. Notice there isn't a wild scramble; and they're pretty good-looking hogs, aren't they?

These standards are based on the theory that various feeds contain certain amounts of digestible nutrients, and if the feeds are wisely selected, properly combined, and fed in certain proportions and quantities, farm live stock will make not only the largest but also the most economical gains.

There is also under test the so-called "free-choice" system, by which the hogs are allowed to eat what they want instead of what the books say they ought to eat. And, by the way, the Dietrich standard provides in part that water should be weighed out in certain proportions as well as the feed. The "free-choice" method includes a trial (1) of whether the hogs do best when feed is before them all the time, (2) when fed from free-choice troughs three times a day, and (3) twice a day.

All this had been going on for 100 days when the figures given here were announced. At the start all the pigs weighed about 42 pounds each, and there were 78 of them. They received shelled corn, wheat middlings, tankage, and, of course, water.

Here's their 100-day record:

	Average final weight	*Profit per pig*
Free-choice (unrestricted)	155	$1.25
Free-choice (3 times daily)	158	1.08
Free-choice (twice daily)	137	.62
Dietrich (water at will)	127	.67
Dietrich (water weighed)	125	.54
Kellner	121	.77
Wolff-Lehmann	101	.34

The profits were based on market prices for hogs and for the feed.

The evidence is all in favor of letting a hog eat what he wants and as often as he wants. But don't forget that 80-cent corn looks just the same to him as 30-cent corn. A hog is the best judge of what he wants and needs, but he isn't economical by nature. Judgment must therefore be used in offering high-priced feeds. Otherwise a yardful of little porkers using a self-feeder may lead you to think that all this is just a pleasant dream. Give a variety of economical food, also charcoal and salt, and then let the hog's appetite decide how much of each. That's the whole thing in hog-raising.

To avoid overfeeding gilts, mix grou[nd] alfalfa or oats with such grain feeds corn, barley, and middlings

Finicky Live Stock

PROF. P. G. HOLDEN, the corn expert, says that cattle and horses need to learn to like certain crops. "I have often seen," says the professor, "both cattle and horses refuse to eat corn: cows most generally refuse to eat silage at first."

Some people have to learn to eat olives, grapefruit, and limburger cheese. But once the palate becomes accustomed to them the first distaste disappears. Live stock are finicky in about the same way, and have to be taught how good certain new crops really are.

THE U. S. D. A. has issued a bulletin—Farmers' Bulletin 667—on "Breaking and Training Colts."

Match the Horses

WHEN selling a bunch of horses we do not lump them off, but grade and match them up into good-looking and serviceable teams. It pays to grade them, and for the same reason it pays to grade potatoes, apples, and farm produce generally before offering it for sale.

Cows Infect Pigs

SOMETIMES we find out what ails one animal through another. A California man saw that his pigs were lank, weak, and unthrifty, and had coughs. He had an examination made, and found that they had contracted tuberculosis from his cows. He had been feeding them the skim milk. Probably somebody's babies got some of the milk too.

A GERMAN scientist tells us of the case of a St. Bernard which after eating the meat from the hoofs of an animal which died of foot-and-mouth disease developed a typical case through infection.

Book Review

COMMON DISEASES OF FARM ANIMALS, by R. A. Craig, is an attractive, well-bound volume of 327 pages, emphasizing more particularly the cause and prevention of disease, but treatment is suggested for cases that can be successfully handled by untrained stockmen. 320 pages. Lippincott, Philadelphia. Price, $1.50.

E

Live Stock—Dairy

Don't Churn Whole Milk

SOME, perhaps, have never heard of churning whole milk. It used to be quite a common practice, but lately has fallen into disfavor, and rightly so.

Among its disadvantages are: It requires too large a churn, is slow and laborious, aud leaves too much butterfat in the skim milk. Churniug hand-skimmed cream is only slightly better.

When milk is set for cream to rise, especially in shallow pans, the surface of the cream becomes leathery and the butter, wheu finally made, is seldom of high quality.

The best dairy butter is now made from thick cream skimmed by a centrifugal cream separator. It should test at least 25 per cent butterfat. A good cream separator leaves less than one twentieth of one per cent of butterfat in the skim milk, as compared with nearly one per cent by hand skimming.

Modern Feeding Methods

By Mrs. Ed Ellis

ANY method of feeding that gets results is a modern method, and the folks who are iu this picture say that these lambs grew to good size and did well. This picture was one of many of a similar nature submitted in our photo contest, and was considered the best of the group of "bottle-feeding" photos.

Here is the best bottle-feeding picture entered in our photograph contest

Dairy Cow "Test"

WE HAVE mentioned the investigations of the German Reimers from which he came to the conclusion that there is no such thing as a correlation between a cow's build and her milking qualities. But according to an article in the "Journal of Heredity," another German, Korreng, has established to his own satisfaction that, other things being equal, the cow with the narrowest lower jaw is the best milker. A great many more facts must be collected before this conclusion can be accepted. Most of the beliefs as to the relation of form to fecundity and milk yield are suspected now to be superstitions. The performance of any animal in question shows as to her own value, and the performance of her ancestors is the best guide as to what her descendants will do.

Pure-Breds "Too Fancy"?

SOME folks say that pure-bred cows have weak constitutions and are "too fancy" to be useful on the average farm. Let's see.

A dairy cow that has given tweuty times her own weight of milk a year is perhaps not as husky as some other cow that has given only a fourth as much. But good farmers do not keep dairy cows for the reason that they are tough. If the law of the "survival of the fittest" were to rule among farm live stock, farming would soon become a very unprofitable and unpopular business.

"Survival of the fittest" is natural selection. Domestic animals are improved, not for their own sakes, but for man's sake, through a process of artificial selection. Such animals become less fitted for a struggle with nature, so man does the struggling for them and pockets what they earn for him.

Feeding Alfalfa to Cows

ALFALFA HAY is rich in protein. So much of the waste matter from it is passed off through the kidneys that pregnant cows fed on too much of it sometimes lose their calves. The kidneys become clogged and the fetus is poisoued. Feed something with the alfalfa to dilute the protein—say corn or barley; and don't throw in the rack all the alfalfa hay that the cows will eat; keep the amount a little below this.

Cow a Good Traveler

A GUERNSEY cow belouging to a New Jersey reader has an interestiug traveling aud milk record. She was imported from the Island of Guernsey, and a few days after she arrived in this couutry was shipped across the United States to California, and milked over 38 pounds the day after she arrived. This is only two pounds less than her usual daily production.

Red-and-White Holsteins

HOLSTEIN-FRIESIAN cattle are everywhere thought of as black and white, but once in a great while a red-and-white calf will be born of black-and-white parents. This is not a violation of any law of heredity.

Away back in the history of Holstein cattle some of the ancestors of this breed were red. Red-and-white Holsteins are not recognized officially, so such cattle are seldom used for breeding. Hence the occurrence of the red color is less and less frequent every year.

Takes Place of Sorghums

AN OKLAHOMA expert thinks that Sudan grass will eventually take the place for forage of all the millets and other sorghums. And a farmer in Macoupin County, Illinois, believes that "wherever oats will grow Sudan grass will eventually take its place." Evideutly he means oats grown for hay. Sudan grass does not furnish grain, and hence cannot take the place of oats or any other grain.

Separator Aids Rat-Killing

JUST how a cream separator can be of service in ridding a farm of rats may at first seem puzzling, but the explanation is simple. A dairyman whose place had been overrun with rats bought a good cream separator. His cats, who had been getting plenty of butterfat in the milk, now receive only skim milk. Thus the richness of their ration was decreased.

The cats became poor, and naturally hunted rats, with the result that they exterminated them entirely.

This is the end of the story as first related, but any person with a good imagination could easily figure out how much corn and other products were saved from destruction through rats by the cream separator.

Strip Cow After Milking

THE Pennsylvania Experiment Station finds that while the milking machine will take the milk clean from most cows, some will retain a pound or so of strippings. The milking is done cleaner after the cows get used to the machine. The careful dairyman will strip the cows after the machine has milked them, to see how clean the milking is, and to give each cow's bag the examination every careful milker gives it.

EW

The milk in the pail the cow kicks over is lost forever

AND the butter-fat that goes into the can through the skim-milk spout of a cheap, inferior or worn-out cream separator is just as surely lost as the milk in the pail the cow kicked over. If you are trying to get along without a cream separator, or with an inferior or worn-out machine, you are losing butter-fat right along and butter-fat is money.

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every day you use it it will be paying for itself out of its own saving.

If you haven't the spare cash right now that need not hinder your immediate purchase.

We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at time of purchase and the balance in several installments, so that a De Laval really pays for itself while you are using it and getting the benefit from it.

Let the De Laval start saving cream for you right now while butter and cream prices are highest. See the nearest De Laval agent at once, or if you do not know him, write us direct for any desired information.

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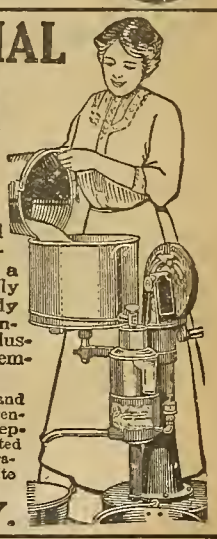

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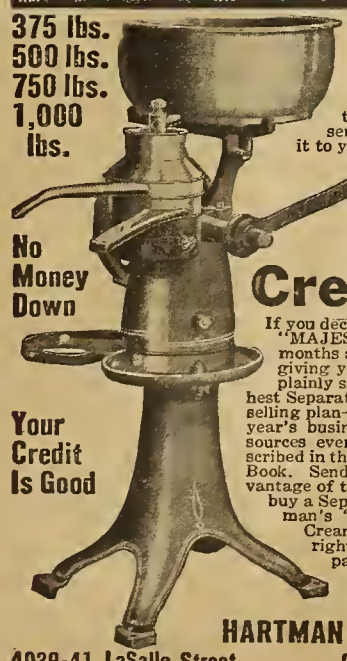

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People Slowly Learn the Facts.

"All my life I have been a slave to coffee. I kept gradually losing my health, but I used to say 'nonsense, it don't hurt me.'

"Slowly I was forced to admit the truth and the final result was that my nervous force was shattered.

"My heart became weak and uncertain in its action and that frightened me. Then my physician told me that I must stop drinking coffee or I could never expect to be well again.

"I thought of Postum but could hardly bring myself to give up the coffee.

"Finally I concluded that I owed it to myself to give Postum a trial. I got a package and carefully followed the directions, and what a delicious, nourishing, rich drink it was? Do you know, I found it very easy to shift from coffee to Postum.

"Almost immediately after I made the change I found myself better, and as the days went by I kept on improving. My nerves grew steady, I slept well and felt strong and well-balanced. Now the old nervousness is gone and I am well once more."

It pays to give up the drink that acts on some like a poison, for health is the greatest fortune one can have. Name given by Postum Co., Battle Creek, Mich.

Postum comes in two forms:

Postum Cereal—the original form—must be well boiled. 15c and 25c packages.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water, and, with cream and sugar, makes a delicious beverage instantly. 30c and 50c tins.

Both kinds are equally delicious and cost about the same per cup.

"There's a Reason" for Postum.

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Just write me a postcard with your name and address and I'll send you my big new 1916 Buggy Book with my special price-splitting, money-saving offer. Think of it! —a genuine Split Hickory this year as low as only $39.25 and up. Remember, I give—

(10)

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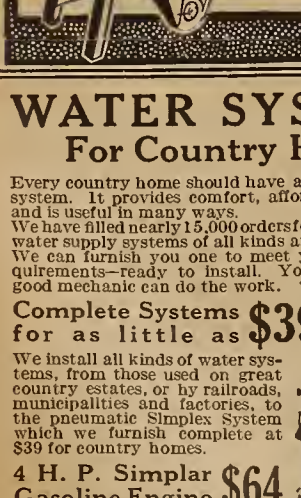
If you already have a NEW HOLLAND, we'll make it better than when new with a set of these plates. Or if you are thinking of buying a new mill, ask us about our proposition before you purchase some other mill.



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Write, explaining your needs fully, and ask for our special circular No. 72.

THE BALTIMORE COMPANY Baltimore, Md.

Crops and Soils

Farm-Made Sorghum

By F. F. Randolph

I HAVE been making our home supply of sorghum molasses from home-grown cane for over sixty years—ever since the process first came into use in the '50's.

At the start, home-made two-roller mills were used. Then came three-roller cast-iron mills which put the home-made affairs out of business. I made my wooden mill with the help of a man having a lathe to turn the rolls. The iron mill cost $70 when it came into use in 1866. Similar mills now only cost a third as much.

While our children were at home it took 40 gallons of sorghum molasses a year for table and cooking to supply the family, but these later years 10 to 15 gallons are sufficient.

At first, iron kettles placed in a furnace were used to boil the juice. We made some as luscious syrup boiled in kettles as I have eaten since boiled in an evaporator.

After using the kettles a few years I bought a sheet of iron, 30 inches wide by about 7 feet long, and nailed it to 2x6-inch wooden sides and called it a "pan," and set it over a furnace. This pan would boil about a barrel of juice at a time, and hastened the work of boiling considerably.

It is highly important that the juice for one batch be all put into the kettle or evaporator at one time. Never, no never, "fill up" while boiling. We have never used a commercial evaporator because our home-made apparatus answers the purpose well. Prompt skimming is necessary to get the best quality of syrup. One-gallon glass jugs are convenient containers for the molasses. We generally get our supply of such bottles at doctors' offices and drug stores at small cost.

I consider good cane syrup a healthy addition to the diet, and with us it has much reduced the consumption of meat, sugar, and butter during the last fifty years.

The cane blades stripped off before crushing the stalks, when cured nicely, are excellent feed for stock, and the seed is valuable for poultry and hog feed.

Nitrates Help on Potash

HERETOFORE, until a comparatively recent time, the commercial fertilizer, nitrate of soda, has been considered simply as a carrier of nitrogen for fertilizing plants. Many thoughtful farmers, however, have not been able to account for the extremely good result, particularly with orchard fruit, following an application of nitrate of soda. They have found that even when the land was known to be quite well supplied with nitrogenous forms of plant food, furnished by applications of stable manure rich in the nitrogen element, they would secure unlooked-for increases in crops when nitrate of soda was applied.

Some additional light has been thrown on this matter by various experiments carried on by different experiment stations. Notably the West Virginia Station has found that when nitrate of soda is applied it may, in addition to supplying nitrogen, become a substitute, in part at least, for the usual form of potash found naturally in the soil, stable manures, and commercial fertilizers.

This is valuable knowledge in view of the present shortage in commercial sources of potash.

Many Oats of Many Kinds

THERE'S money in the right variety of seed oats. Look at this:

Twenty varieties of oats grown in one-tenth-acre plot, seeded April 13-14, 1915, by the Winnebago County (Illinois) Improvement Association, made an average yield of 72 bushels (2,304 pounds) per acre.

The five varieties making the highest yield per acre respectively were the following:

Rejuvenated White Bonanza	77.32 bu.
Wisconsin Pedigreed No. 1	77.11
White Kherson	77.02
Worthy	76.03
Silver Mine	75.81

These are all white oats.

The five lowest yielding varieties averaged 66.44 bushels to the acre. On a 40-acre field this would mean over 400 bushels less oats to the farmer who raised the lower producing sort.

Fourteen of the twenty varieties under test were white oats, and yielded 73 bushels per acre.

The six varieties of yellow oats tested yielded 68.5 bushels per acre.

There was practically two weeks' difference in the time of maturing of the earliest and latest varieties in this test—102 days from seeding for the earliest, and 118 days for the latest.

The heaviest yielding varieties matured in from 116 to 118 days, except White Kherson, which matured in 104 days from date of seeding.

These experiments were conducted on prairie land soil which had been cropped for sixty years, but the land has been well cared for, and is still in a good state of fertility. A dressing of stable manure was applied to this land previous to planting corn in 1914.

TEAM work in selling as well as in buying is making rapid strides. The Hyde County Grain Growers' Association of North Carolina is advertising 10,000 bushels of seed soy beans in car lots and less.

Tons of Sweetness

By Esther Newman

IMMENSE piles of sugar beets, such as shown in the picture, are rather a common fall sight in Colorado. These beets are waiting to go to the beet-sugar factory.

This is their history:

When the beets are ready for harvesting they are plowed out and thrown into rows. Laborers known as "toppers" cut the tops from the beets with long knives, after which the beets are loaded into wagons and hauled to dumps at railroad sidings.

These dumps have raised driveways with an arrangement for lifting the bed of the wagon so as to slide the entire load off into an open freight car below. If cars are not plentiful enough the beets are shoveled into great piles at the

A common Colorado fall scene

dumps. Some of these contain a thousand tons of beets. Then as fast as the factories are ready for these beets cars are rushed to the piles, and in a short time the beets are all gone.

To Grow Legumes on Hills

By L. A. MacCumber

YOU may be interested in hearing my plan for securing a good catch of clover in worn-out land, very rolling and hilly and composed of sand and clay. The clay bakes down hard after a rain and cracks open when dried out. The fact is, I was not able to get a satisfactory stand of any kind of hay grass on this piece of land until last fall.

It had been summer-fallowed and the first week in August I fitted the ground for seeding by dragging over the plot twice. Then I sowed the following mixture:

Four quarts of medium red clover, two quarts Alsike, and one quart each of white sweet clover and Northern-grown alfalfa seed, all well mixed together. I sowed this quantity at the rate of seven quarts per acre along with two and one-half bushels of good quality of recleaned seed oats.

The oats reached a height of about five inches before freezing weather set in, and it protected the young and tender clover plants against soil-washing and soil-blowing. The clover seed did not wash down-hill, but stayed on top of hills and on hillsides where it was needed.

My idea in sowing alfalfa and sweet white clover was to secure inoculation, as I expected to sow alfalfa for a permanent hay crop. The alfalfa and sweet white clover both did as well as the other clovers.

Hens Paid The Mortgage

RED COMB POULTRY FEED

One farm woman writes her flock of hens paid the mortgage. She made this big profit simply by *scientific feeding.*

Red Comb Poultry Feeds, the scientific feeds, cost less than to buy the materials and mix them yourself. Ground of choice whole grains. *Contains least grit—percentage guaranteed on each bag—no grit if preferred.* Write for our free book, "Feeding Poultry for Profit."

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Mfrs. of the Famous Line of Red Horn Dairy Feeds

Red Comb MEANS HEALTH

MORE PROFITS THIS WAY FARMERS' FAVORITE FEED COOKER

Saves feed and veterinary bills. No hog cholera. Used most every day on any farm—cooking feed for hogs and poultry, heating water for scores of uses, rendering lard, boiling sap, etc. "Saves its cost in a month," writes a user. Any fuel. 6 sizes. 30 days' free trial. Satisfaction guaranteed. Free catalog.

Lewis Mfg. Co., 72-86 Owego St., Cortland, N. Y.

43 VARIETIES Poultry, Pigeons, Ducks, Geese. Incubators, freight paid. Feed and supplies. Catalogue in colors free.

Missouri Poultry and Squab Co., Dept. X. X., Kirkwood, Mo.

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Our new book for 1916 tells about our leading varieties of land & water fowls, also incubators, brooders & squabs. High quality at low prices. 31st year. 96 page catalog FREE. H. M. JONES CO., Box 54, Des Moines, Ia.

MONEY IN POULTRY AND SQUABS Start small. Grow BIG. Get winter eggs. Keep healthy fowls. Save your chicks. Our Big Book Tells How. Shows fowls in natural colors, how to feed for eggs, select best layers, plans for houses. FREE.

Crescent Poultry Farms, Box 31, Des Moines, Iowa

FOR SALE 640 acres land two miles from Dermott. Chicot County, Arkansas. Dermott is a city of the second class. Population 3500 and growing fast. Apply to J. A. SWYGART, Owner, 609 West Washington Ave., South Bend, Ind.

GREIDER'S FINE CATALOGUE of pure bred poultry; 70 breeds illustrated and described, many in color. Perfect poultry guide—all facts. Low prices on stock and hatching eggs. Incubators and brooders. 23 years in business. You need this book. Send 10c for it—today.

B. H. GREIDER, Box 49, Rheems, Pa.

140 EGG INCUBATOR CHICK BROODER Both for $10

Freight Paid East of the Rockies

Both are made of Calif. Redwood. Incubator is covered with asbestos and galvanized iron; has triple walls, copper tank, nursery, egg tester, thermometer, ready to use. 30 DAYS' TRIAL—money back if not O.K. Write for FREE Catalog now.

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and Almanac for 1916 has 200 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about Incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c.

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Learn to Stuff Birds animals, game heads, tan furs, make rugs & robes. Quickly learned by men and boys. Big profits from spare time. Intensely interesting. Investigate. Write today for free book. Only a few free—so rush.

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Get FREE Chicken Book

Our big, illustrated, 1916 Year-Book—"Profits in Poultry Keeping"—will help you *make more money* with fowls. Tells how to raise chicks, get more eggs and make larger profits *with less work.* Learn about

Cyphers-Built Incubators Sold at Low Prices

Quality unequaled. Big hatches and a *guarantee* that protects you; backed by *20 years of leadership.* We want you to have a copy of this great Guide for Poultry Raisers. Write for it today—free.

CYPHERS INCUBATOR CO., Dept. 71, BUFFALO, N. Y.

New York Chicago Dallas Boston Kansas City Oakland

Poultry-Raising

Layers Net $2.40

By Robert S. Doubleday

OUT on the Pacific Coast, in the beautiful Puget Sound country, Mr. John H. Haskell has won success with his layers which deserves some attention. On January 1, 1915, Mr. Haskell had 243 White Leghorn hens. By July 1st the flock had been reduced by the usual process of elimination to 226. A fair average of his flock would be about 234.

Between the two dates mentioned his hens laid the following number of eggs, which were sold in the open market as follows:

January	2,446 sold for	$56.07
February	3,625 sold for	73.37
March	4,814 sold for	94.31
April	4,760 sold for	90.80
May	4,626 sold for	70.70
June	4,464 sold for	67.82

At the end of nine months, October 1st, his hens had laid 32,719 eggs, for which he had received $693.68. In addition, he had received an income of $93 from young pullets and fries sold, and still had a few more shipments to sell. He had on hand 150 fine young pullets to be added to his flock of yearling layers for his 1916 operations.

His total feed bill amounted to $372.66 during the nine months.

Mr. Haskell breeds his own stock, but hires his chicks hatched for an agreed price per chick. He raises the chicks himself by the stove-brooder system.

His buildings are simple and modest, made for the most part of rough material, but scientific principles were followed in their construction as regards complete shelter and supply of fresh air and sunshine.

Briefly stated, his plan of feeding is a slight modification of the Cornell mash mixture, kept before the hens all the time. The scratch feed is one half wheat and one half commercial scratch food. Green feed in variety can be easily furnished in a country where kale, cabbage, and rape can be kept green throughout the year.

One of the mysteries connected with Mr. Haskell's operations which claim the attention of the neighboring poultrymen is how he keeps such vigorous, productive laying stock when absolutely no range is afforded his hens.

County Laying Contests

THE big national and international egg-laying contests have filled the poultry eye of the public so full that there is danger of the small local laying contest being overlooked. A number of these local contests are springing up in a number of States.

One such local contest is making poultry history in Essex County, Massachusetts, and was inaugurated by the poultry association of that county.

The layers are housed in typical open-front buildings 12x12 feet square, partitioned in the center to accommodate two pens of ten hens each. Outside runs 20x50 feet are connected with each pen.

The scratch grain—one part corn and one part wheat—is fed in eight inches of straw litter, and a mash mixture composed of the following ingredients is before the layers all the time: 100 pounds wheat middlings, 100 pounds wheat bran, 100 pounds corn meal, 100 pounds ground oats, 50 pounds beef scrap, 50 pounds fish scrap.

Green food in the form of mangels in winter and suitable green food in summer is generously supplied, and the usual grit, shell, charcoal, and fresh water are before the birds constantly.

It is needless to say that the poultry keepers of Essex County and surrounding territory have a deep interest in this contest.

Chicks from Ridged Shells

By C. M. Trueblood

I HAVE a good laying strain of Rhode Island Reds, and my aim is steadily to improve the laying quality.

One of my best hens always lays a ridged shell.

As an experiment I incubated several of her eggs last spring and secured perfect chicks from the ridged-shell eggs.

In my first hatch one of this hen's ridged-shell eggs hatched twenty-four hours earlier than any of the other eggs, and the chick is now the largest of the brood.

The ridge on this hen's eggs is usually at one side the circle pipped by the chicks, but one chick broke the ridge. The inside of the ridged shells are smooth and normal in shape.

Since the first hatch I have incubated other ridged-shell eggs with success in each case.

Why Named Barred Rocks

FRANCIS DAMOND, who was born and bred at Plymouth, Massachusetts, was well acquainted in his boyhood with Doctor Bennett, who is credited with being the originator of the Barred Plymouth Rock breed.

Mr. Damond asserts that the name "Barred Rock" was selected by Doctor Bennett on account of the striking resemblance of the barrings on the feathers of his new breed of fowls to the light and dark strata of color shown in the historic Plymouth Rock on which the Pilgrims landed.

This landmark, known in song and story the world over, is not native rock of New England. The nearest place that rocks of like coloring and texture have been found is on the Newfoundland Coast, and it is believed the original Plymouth Rock on which the Pilgrims first stepped was brought down by ice to the Plymouth shore.

Doctor Bennett could not have found a happier combination in naming this widely popular breed.

Egg-Money Rolling Up

Word comes from the Mississippi College of Agriculture to the effect that a growing number of farmer poultry keepers of that State are realizing a nice advance on their eggs by co-operative selling under the direction of the State College of Agriculture.

E. P. Clayton, poultryman at the college, handles the eggs for the association members without charge. By this plan of selling the average price of eggs secured is 30 cents, and three cents a dozen covers the cost of express and crating.

WE WANT you to make more money with your poultry, and to do it with less work, so we are going to print, in addition to our regular poultry department every issue, a special poultry number once a year. The 1916 Poultry Number of FARM AND FIRESIDE will be published February 12th. This issue will contain many practical and interesting articles about money-making poultry businesses. The articles will be profusely illustrated. If you keep a few chickens or have a large flock, you can find many things that will be helpful to you.

Turkey Breeding Stock

By Anna W. Galligher

TURKEYS are considered as among the hardiest of poultry after they are mature, but they appreciate some extra care in winter. This does not mean that they require pampering. In spite of the fact that when left to themselves they prefer to sleep in the bare branches of trees or on the ridge pole of a building, they are better off for having some shelter.

Did you ever notice how blue the turkeys' heads look as they come down from a roof or treetop of a cold mid-winter morning? Somehow their feathers—although they have a heavy coat—do not seem to turn rain as well as the feathers of other poultry.

We provide a good dry shed, enclosed only with poultry netting on the south side, for the turkeys intended for the next season's breeding stock. Good strong roosts, not too near the roof, should be provided. If the roosts are too close to the roof, the turkeys batter their wings when flying up, and this will cause them to seek other roosting places.

Turkeys do better to have free range even in winter, except when the snow is very deep. They also require plenty of green stuff, such as sprouted oats, green rye, or raw vegetables along with their grain. Onions are greatly relished and act as a liver regulator. Sharp grit, charcoal, and coal cinders should be provided, and see that they never lack pure water to drink.

It is poor economy to keep turkeys in a house with other poultry. As a rule they are so abusive as to reduce materially the profit from chickens or ducks housed with them.

Sells Ducks at $1.25 Each

By M. Kennedy

DUCKS are much easier to raise than chickens, and reach the roaster stage much quicker.

The chief requirements of ducks are plenty of water, grit, all the suitable feed they will clean up three times a day while growing, and at all times to be handled or disturbed as little as possible.

More ducks are killed by unnecessary handling, chilling, and underfeeding than all other causes combined.

Where they can be allowed free range they will pick up a larger portion of their food than will chickens of the same age, which reduces the cost of feed, and the animal protein feed in particular.

If the feeding and watering is invariably done in a certain definite place some distance from the house, the ducks will not bother around the home building.

Whether yarded or on range, ducks must never be without fresh water, and it should be deep enough in the drinking vessel for them to immerse the entire head. Otherwise their eyes will get sore and their nostrils plugged up with the mash food. This condition will cause death in a few days unless relieved.

Should the nostrils become gummed up, I clean them out carefully with a crochet hook, holding their heads firmly to prevent injury to the tender membranes.

Another duck fallacy that still receives credit among many is that ducks must have sufficient water in which to swim. Out of a flock of 36 raised the past summer, the entire water supply was furnished in flat three-gallon jars. Only one was lost out of the flock, and the one death was caused by accident.

Rear Ducks for Holiday Market

Another cause of the unpopularity of ducks is the mistake that is made in hatching them too early, and holding the ducks for weeks or months after they have arrived at marketing age so as to get the advantage of better prices during the holidays.

For the green roaster age, ten or twelve weeks will be sufficient time to mature them.

In the summer, when my flock of 36 ducks were getting all the green feed they could eat, they consumed only 15 pounds of feed a day, which was all they could clean up.

The mash was composed of two pounds wheat bran, one and one-half pounds middlings, one and one-half pounds corn and oat chop, and one and one-half pounds of coarse, sifted sand mixed with water and skim milk. This was fed them from the fifth day until maturity. For the first five days bread squeezed out of milk, liberally sprinkled with sand, was their diet.

When confined, ducks should have all of the green feed they will consume. When young I feed onion tops, lettuce, clover, and grass chopped fine.

Unless the ducks can have free range they require beef scrap or other form of animal food at the rate of eight to ten per cent of the mash fed. It is an uneconomical practice to feed ducks unground grain, and for young ducks it is dangerous as well.

It is important to have the mash fed moist but not sloppy. Not long ago I lost a valuable Buff Orpington duck by allowing it to eat the mash dry without moistening. It choked to death.

I have found it more profitable to raise pure-bred ducks both for market and for the sale of breeding stock. Mongrel stock has less attractive carcasses, and are much less uniform in appearance after dressing.

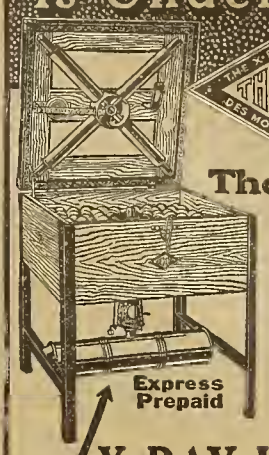
My ducks sold to private customers bring me from $1 to $1.25 each net, which is fully a third more than I receive for chickens five to seven months old.

Outside Nest Boxes

WHERE poultry houses are too small to accommodate all the fixtures comfortably, some poultrymen practice the plan of having the nest boxes outside of the partition wall. The nest box is made 15 inches wide and the same in height and as long as desired. Partitions are placed to allow 12 to 15 inches for each nest, according to the size of the breed kept. The nest box is attached to the outside of the house with strong hooks and screw eyes. The cover is hinged, and fitted with a pitch sufficient to shed water, and is covered with roofing paper.

In cold climates the entire construction of the nest box must be tight and warm enough to keep the laying hens comfortable when on the nest. In hot weather the nest-box cover can be slightly elevated to afford ventilation. In some cases this plan of nest box is quite a convenience as well as a saving of room, as the eggs can be gathered outside the poultry house.

When the Lamp Is Underneath



There are no cold corners. You save oil and get BIGGEST hatches

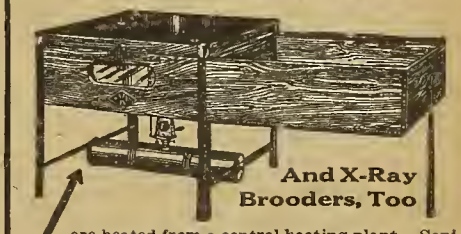
X-RAY Incubators

are heated from central heating plant squarely underneath. No cold corners or sides, no "cooked" eggs. Note the big oil tank—requires only one filling—one gallon for the entire hatch.

Get Our Factory-Direct Price and Big Free Book No. 52

Get all the facts about X-Ray construction and X-Ray hatching record. Learn all about X-Ray automatic trip that keeps the heat just right; the X-Ray generator that supplies the moisture of mother hen, producing healthier chicks, the X-Ray duplex heater that carries mild, even heat to every corner. Get X-Ray facts in big free book.

Express prepaid to practically all points.



And X-Ray Brooders, Too

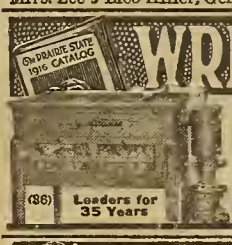
are heated from a central heating plant. Sanitary, healthy, rat-proof. Gives chicks best start.

X-RAY INCUBATOR CO., Dept. 52, Des Moines, Ia.

POULTRY BOOK FREE Contains condensed experience of twenty-five years with poultry. Houses, Yards, Incubator Operation, Care of Chicks and Fowls, Diagnosis and Treatment of Disease, Poultry Secrets, Pointers For the Amateur, Mandy's Poultry School, The $1,000 Egg, Hatch Record, Egg Record, etc. All free.

GEO. H. LEE CO., 214 Lee Bldg., Omaha, Neb.

Mfrs. Lee's Lice Killer, Germozone, Lee's Egg Maker, etc.



WRITE Your Name on a Postal

and get our 1916 Incubator Book FREE and postpaid. Shows why Prairie State Incubators "hatch most chicks that live." Contains chapter on Poultry Diseases, also ons on hatching and rearing.

PRAIRIE STATE INCUBATOR CO. 10[illegible] Main Street, Homer City, Pa.

$5.50 FREIGHT PAID 70 EGG INCUBATOR

Here's the best incubator offer on the best incubator. Guaranteed to hatch equal to any $15.00 machine.

1916 RELIANCE Incubator

Best built—double walls, hot water heat, copper tank. Full equipment—lamp, regulator, thermometer, etc. Freight Paid. Order today on Satisfaction or Money Back Guarantee—or write for literature. We make Brooders, too.

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DETROIT CUTS THE COST

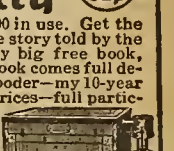
Here is the low priced famous Detroit Incubator—a wizard egg hatching machine, simple and reliable. Big hatches a sure thing. Large production makes my price low. Send Post Card now for my free book and startling price offer.

HOMER L. SMITH, Pres.

(1) Detroit Incubator Co., 450 Campbell Ave. Detroit, Mich.

25 TIMES World's Champion Belle City Incubator

402,000 in use. Get the whole story told by the Championship Winners in my big free book, "Hatching Facts." With book comes full description of incubator and brooder—my 10-year money-back guaranty—low prices—full particulars—and my $1300.00 Gold Offers. Learn how I paid one user $156, another $50, many from $45 down. Write me today for Free Book. Jim Roban, Pres.



Belle City Incubator Co.
Box 100, Racine, Wis.

Both Machines Freight Paid Only $10

Think of it! These two UNBEATABLE Wisconsin Machines—Winners in five great National Hatching Contests, both for only $10, freight paid east of Rockies. Guaranteed 10 years and sold on 30 Days' Trial—

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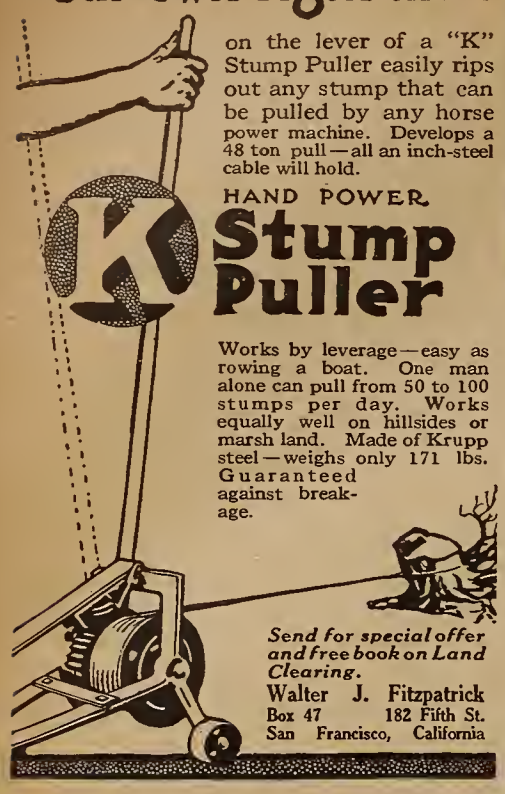
MONEY BACK IF NOT SATISFIED

Wisconsins are made of genuine California Redwood. Incubators have double walls, double glass doors, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Biggest incubator bargain of the year. Send for our new 1916 catalog fully describing this outfit. A postal brings it by return mail.

180-Egg Incubator and Brooder, both only $12

WISCONSIN INCUBATOR COMPANY
Box 76, Racine, Wis.

Your own right arm



on the lever of a "K" Stump Puller easily rips out any stump that can be pulled by any horse power machine. Develops a 48 ton pull—all an inch-steel cable will hold.

HAND POWER
K Stump Puller

Works by leverage—easy as rowing a boat. One man alone can pull from 50 to 100 stumps per day. Works equally well on hillsides or marsh land. Made of Krupp steel—weighs only 171 lbs. Guaranteed against breakage.

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SAMPLE OUR SEED
Three earliest vegetables in cultivation for 10c. One packet each, Robinson's Earliest Tomato, Earliest Round Red Radish, Earliest Lettuce. 10c to new customers. Regular price 30c. CATALOG FREE.
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BIGGEST MONEY-MAKER KNOWN—INVESTIGATE
The greatest forage plant that grows. Nothing equal for fertilizing. Excels Alfalfa as a producer. Crop worth $50 to $125 per A. Easy to start. Grows everywhere. Can save you money on best tested, guaranteed, scarified seed. Write today for Free Sample, circular and 100-p. catalog.
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CLOVER AND TIMOTHY $5.00 BU.
Greatest Grass Seed Value Known—Investigate. Alsike Clover and Timothy mixed—the finest grass grown for hay and pasture. Cheapest seeding you can make, grows everywhere. You will save 1-3 on your grass seed bill by writing for free sample, circular and big Co-operative Seed Guide. Write today. AMERICAN MUTUAL SEED CO., Dept. 542, 43rd and Roby St., Chicago, Illinois.

Free for Testing
A pair of mated EVERBEARING STRAWBERRY PLANTS FREE if you will report as to your success with them. Will bear loads of big, red, berries from June to November. We have counted 480 berries, blossoms and buds on a single plant. A postal will bring the plants, also enough seed of the new CEREAL FETERITA to plant a rod square of ground. Also a pkt. of perennial ORIENTAL POPPY seed. Send 10 cts for mailing expense or not, as you please. Write today and get acquainted with
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You MUST have our new catalogue if you want to know real values in nursery stock. Apples, Peaches, Pears, Berries, Ornamentals, etc. It is FREE. Write for it today, SURE, and compare the values with others. It will save you money. Drop a postal NOW to
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CLOVER AND TIMOTHY $5.75 Per Bu.
DECIDED BARGAIN—INVESTIGATE and Save Money
Red Clover and Timothy mixed—the standard grasses, cannot be surpassed for hay or pasture. Contains 1-3 clover, just right to sow. Thoroughly cleaned and sold on approval, subject to government test. Ask for this mixed seed if you want our greatest bargain. Have Pure Clover, Sweet Clover, Timothy and all Field and Grass Seeds. Write today for free samples and 100-p. catalog.
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Galloway's Porterhouse Tomato

Send ten cents for large packet Galloway's New Porterhouse Tomato. One grower says, "Solid balls of luscious meat. I never saw its equal." Great size, firm and meaty. Just like a beefsteak. You also get my 1916 FOUR-COLOR PURE SEED BOOK AND PLANTING GUIDE FREE. Everything from A to Z! Field, vegetable, flower seeds; fruits, shrubbery, trees, plants—all kinds. Lowest wholesale prices. GALLOWAY BROS. & CO. 395, Galloway Sta., Waterloo, Iowa

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AMERICAN NORTHERN GROWN
Our Fall Book tells how to succeed growing Alfalfa on any soil or climate east of the Missouri River; how to sow; how to harvest; what to do to retain a perfect meadow. We refuse to handle Turkestan or "Dwarf Alfalfa," our seed is all American grown, guaranteed 99% pure. We can furnish Nebraska, Montana or Dakota and Grimm seed at very moderate prices.
GRIMM ALFALFA We have the Genuine Grimm as well as Hansen's great new Siberian varieties. Also "Dakota 30" and Nebraska seed.
CLOVER and GRASSES
Northern grown and of strongest vitality. We can furnish grass mixture suitable for any soils.
WING'S GARDEN and FLOWER SEEDS
Are of highest quality that can be produced—fully described in our free catalog. Write for it today.
WING SEED CO., Box 249, Mechanicsburg, O.

Learn How Fruit Growers Get Rich **FREE**
This big, FREE Book—*just off the press*—tells how growers get $12.00 a barrel for apples, $2.70 a crate for peaches, $1500.00 from the yield of only 36 trees—and a host of other helpful facts.
STARK BRO'S
100th Birthday Fruit Book
It will help you grow more and better fruit—show you how to make a "back yard orchard," etc. Write for it *at once*.
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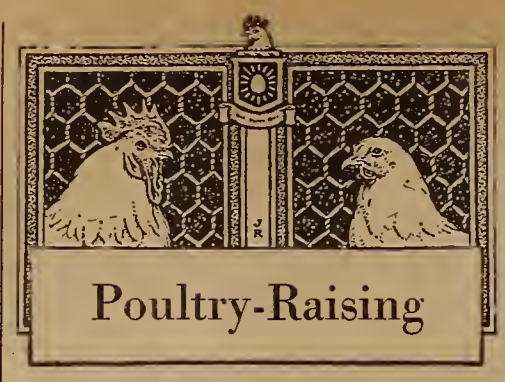


Poultry-Raising

Grit Kills 350 Chicks

By Philip M. Marsh

I HAD a nice flock of 404 healthy chicks under a brooder coal stove last spring, which I fed generously with sour milk and sparingly with solid food like rolled oats and boiled eggs. About the third day the matter of grit occurred to me. I placed a generous shovelful of sand among the chicks. The chicks spent a whole afternoon on that sand, eating it as happy as could be. I supposed they could not get too much. But within a day they began to die, and in spite of the best of nursing 352 out of the 404 were dead inside of a week.

I opened several, and found their gizzards much swollen and packed with the sand. For several days following the sand-eating I fed nothing but milk, in the hope that the sand in their gizzards might pass out of their digestive systems. But this method only prolonged life. As soon as I fed any solid food, more chicks died. Evidently no solid food could get through them.

This expensive experience has enforced an important lesson. Chicks brooded by hens are kept in outdoor brooders where they can get to the ground a few days after hatching and can take care of the grit problem. But chicks brooded indoors must be furnished grit sparingly until they learn what to eat and what not to eat.

I had never been made aware of this danger either in study, reading, or from others' experience.

Class Tomatoes as Fruit

EVA SCHRECTER of Brooklyn was arrested for selling vegetables on Sunday. She showed that what she sold was tomatoes, and that she could legally do this under the law which allows fruits to be sold on Sunday. The court first held that she was guilty because the tomato is a vegetable, but, on looking the matter up, finally classed the tomato as a fruit and let the accused go free.

Decrease Smut Losses

SMUT in thirty-four fields of oats, in the crop of 1915, where the seed was untreated in eleven towns of Chautauqua County, New York, caused an average loss of 10⅓ per cent in the crop, or 3½ bushels per acre, loss of yield. In seven fields of oats in five towns, in the same county, treated for smut with formaldehyde, at a cost of less than one cent per bushel, the smut loss was only 4 per cent. The total loss in the county for smut was close to 100,000 bushels of oats, having a value at present market prices of about $60,000.

This loss could have been reduced $36,000 for the county had the seed oats been generally treated.

Could You Get In?

ILLINOIS has a Top-Notch Club, the credentials for getting in being authenticated records of yields of 100 bushels of corn and oats per acre and 50 bushels wheat per acre. Membership in this club furnishes free advertising throughout the State, and brings opportunity to make sales of seed grain.

MANY who do not make use of cold-frames would do so if they understood that an ordinary canvas or muslin answers well for the covering of the cold-frames to take the place of glass sometimes used.

PERSONS interested in the government rules for grading corn as to moisture, color, damage, foreign material, and cracked kernels should send to the Department of Agriculture at Washington for Bulletin No. 168.

Arizona's New Sweet Corn

PAPAGO sweet corn is the product obtained by experimenting with a few grains of native corn originally grown by the Papago Indians of New Mexico. Papago sweet corn is hardy and resists drought and heat. It is not quite as sweet as the Eastern varieties of sweet corn, such as the Evergreen, but is much more palatable than field corn.

The Next Issue News

Volume I Farm and Fireside Editor's Office *Number 5*

Poultry plant of the Ohio Hospital farm near Dayton

Making Money with Poultry

Egg production, at low cost, and profitable chick production are well provided for in the plant of the Ohio State Hospital farm near Dayton. It is a practical business plant without any frills. An interesting article by B. F. W. Thorpe about this money-making poultry farm will appear in the Poultry Number of FARM AND FIRESIDE, which is the next issue, the February 12th number.

Hen Lays 314 Eggs in 365 Days

One hen in the United States has laid 314 eggs in a year. The picture of this hen with the pictures of twenty other hens that have laid from 225 to 303 eggs apiece in a year—two full pages of pictures—will be printed in the next issue.

How to Get Larger Hatches

There is much less luck in hatching chickens with an incubator than many persons believe. If you aren't getting good hatches, don't take all the blame yourself. More often poor results are caused by the incubator. "To Get Larger Hatches" is by D. S. Burch. It will be printed in the next issue.

When a Corn-Belt Egg Travels

Government investigations show that two dozen eggs out of every 30-dozen case are cracked, mashed, dented, or leaky when they reach market. New York City alone received more than 100 million damaged eggs last year. This one loss amounted to more than three million dollars. Such losses can be reduced greatly. The answer with pictures appears in the next issue.

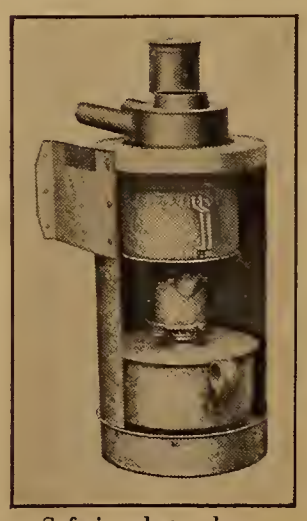
Holds egg record

Falls in Love with a Movie Actress

Sam Llewellyn falls in love with Paula Hunt, a movie actress. Sam goes to Chicago and gets a job with the same film company so he can be near Paula. His experiences are told in "Behind the Curtain," a thrilling story by Edwin Baird. It begins in the next issue, February 12th number.

Why Some Men Don't Like Chickens

It has been proved many times that no other live stock can turn grain and forage into a finished commercial product so economically and profitably as a hen. Nevertheless, the average masculine verdict is, "Hang the hen! Too fussy for a grown man, and the income too small for the care and labor required." This question is analyzed in a readable way in the next issue.



Safe incubator lamp

EMERSON Farm Tractor
Model L—12-20 Horse Power
A four-cylinder, 2-speed, light-weight tractor of great power, suitable for any size farm. Will pull the implements you now have on your farm—gang plows, harrows, mowers, binders, manure spreaders, road drags or graders. Will also operate your ensilage cutter, feed grinder, circular saw, etc. Does more work than horses—costs less and is so simple anyone can run it.
Emerson-Brantingham Implement Co. (Inc.)
531 S. Iron Street, Rockford, Illinois
Please send free literature on articles checked:
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Virginia Farms and Homes
FREE CATALOGUE OF SPLENDID BARGAINS.
R. B. CHAFFIN & CO., Inc., Richmond, Va.

Money-Making Farms Throughout 15 eastern states; 1 to 1000 acres, $15 per acre up; several with live stock, tools and crops included to settle estates. Illustrated catalogue, "Latest Farm Bargains," mailed free. E. A. Strout Farm Agency, Dept. 2699, 47 West 34th St., New York

Spray Your Crops
KANT-KLOG SPRAYER
9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. *Send for catalog.* Agents wanted.
Rochester Spray Pump Co.
191 Broadway Rochester, N. Y.

RIDER AGENTS WANTED
in each town to ride and exhibit sample 1916 "Ranger" Bicycle. *Write for special offer.*
We **Ship on Approval** *without a cent deposit*, allow **30 DAYS' FREE TRIAL**, actual riding test, and *prepay freight* on every bicycle.
LOWEST PRICES on bicycles, tires and sundries. *Do not buy* until you receive our catalogs and learn our *unheard of prices* and *marvelous special offer.* **Tires**, coaster-brake rear wheels, lamps, parts, sundries, *half usual prices.*
MEAD CYCLE CO., Dept. C-83, CHICAGO, ILL.

PEACH & APPLE TREES 2c & up
Pear, Plum, Cherry, Small Fruits, Strawberry Vines, Nuts, etc. GENUINE HALE BUDDED from Bearing J. H. HALE TREES. GENUINE Delicious APPLES. CATALOG FREE.
TENN. NURSERY CO., Box 18, Cleveland, Tenn.

BERRIES
Big, luscious, beautiful, right out of your own garden! What a treat! We have several true-to-name varieties adapted to your soil and climate. Plants guaranteed and packed fresh for shipment. Write today for our 1916 Book of Berries—free.
The W. F. Allen Co.
82 Market St., Salisbury, Md.

Maloney's TREES
Sold at cost plus one profit
Have been for years advertised in the Farm Papers which guarantee their advertising. If the trees had not made good this advertisement would not appear. We invite you to visit our Nursery of 400 acres, the largest in New York State, or send for our big free wholesale Catalogue illustrated in colors of Fruit, Nut, Ornamental Trees, A-1 Maloney Quality sold at cost plus one profit only. Write to-day.
MALONEY BROS. & WELLS CO.
86 Main St. Dansville, N. Y.
Dansville's Pioneer Wholesale Nurseries

SWEET CLOVER $5.50 PER BU.
White Blossoms. Biggest bargain in unhulled Sweet Clover this season. Have scarified hulled seed at low prices. Wonderful money-maker. Best paying crop on the Farm today. Builds up worn out land rapidly and produces heavy, money-making crops while doing it. Splendid pasture and hay; inoculates your land for Alfalfa. Keep up with the times. Investigate. It will pay you to get our free samples and prices and big **Profit Sharing** exclusive Field and Grass **Seed Guide.** It's free. AMERICAN MUTUAL SEED CO., Dept. 942, 43rd and Roby St., Chicago, Ill.

JAPANESE ROSE BUSHES

Five for 10cts.
The Wonder of the World
Rose Bushes with roses on them in 8 weeks from the time the seed was planted. It may not seem possible but we **Guarantee** it to be so. They will **BLOOM EVERY TEN WEEKS,** Winter or Summer, and when 3 years old **will** have 5 or 6 hundred roses on each bush. **Will grow** in the house in the **winter** as well as in the ground in summer. **Roses All the Year Around.** Package of seed with our guarantee by mail, **only Ten Cents.**
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Plant Food for Potatoes

SINCE nitrogen in the form of sulphate of ammouia is becoming more plentiful as a by-product in the manufacture of gas from coke and coal, potato growers have become much iuterested in learning if this cheaper source of nitrogen will successfully take the place of nitrate of soda for growing large yields of potatoes.

The Maine Experiment Station has now carried on experiments with crops of potatoes grown in 1914 aud 1915 with a view of solving this prohlem.

Five separate crops were grown each year, using five different fertilizer mixtures at the rate of 1,500 pounds of a 4-8-7 mixture. The phosphoric acid aud potash content was from the same sources in all the mixtures.

In one mixture two thirds of the uitrogen was nitrate of soda. In another two thirds of the nitrogen was sulphate of ammonia. The other three mixtures contained different proportions of both nitrate of soda aud sulphate ammouia. All mixtures contained one third of the nitrogen in the form of low-grade organic forms of ammoniates which cost less than either nitrate of soda or sulphate of ammonia. But this low-grade material is not so quickly available.

These experimental crops both years gave equally as good yields from the mixtures containing sulphate of ammonia as the ones that contained nitrate of soda. The yields varied from 306 hushels up to 328 bushels per acre. But the average yields for the sulphate of ammonia mixtures were slightly above the yields where nitrate of soda was used. Previous trials made by farmers seemed to indicate that nitrate of soda was the better form of nitrogen for potatoes.

This experimental work hy the Maine Station will he repeated for four or five years, but the present indicatiou seems to show that farmers can save some mouey [illegible] phate of ammonia as a [illegible] en in place of the more [illegible] e of soda.

Milo Thick

MILO should be planted thick in the row if it is to stool out and make a proper supply of heads. At least, S. H. Hastings found this to be true by many experiments in the San Antonio region of Texas. The plants spread wide apart in the row do not produce the heads. Where the rows are four feet apart from five to six pounds of seed to the acre are none too much. Where so many plants would overtask the moisture in the ground, as in an arid climate, Hastings advocates that the plants be kept thick in the row, and the rows spread to a distance greater than four feet.

Balancing Soil Potash

WHEN wheat has yellow, white, mealy, half-mealy, or spotted kernels the soil in which it grew has too much potash for the nitrogen. The remedy is to apply nitrate of soda as a commercial fertilizer, no matter how rich the soil may be, or to rotate crops so a legume will go before wheat, or to give the land a long fallow treatment before sowing, either hy early summer plowing and cultivation before sowing, or by the regular semiarid-region summer fallow with cultivation. This treatment develops nitrates in available form and balances the potash.

Safety First in Seed Corn

THERE is quite a lot of crib-stored 1914 crop corn that is a safer seed-corn prospect than much of last year's immature crop. Here is a sensible recommendation made by A. N. Hume of the South Dakota Station for finding the value of this old crih corn for seed purposes:

"Select 100 ears from different portions of the crih which will fairly represent the entire quantity stored. Make a germination test, using one kernel from each of the 100 ears. If 85 or more kernels make a vigorous growth, the corn is a fairly good seed prospect. Leave the corn that is wanted for seed unshelled until spring.

"Then make another germination test, using at least three kernels from each ear—one from the tip, one from the butt, and one from the middle, discarding any ears in which the test shows dead kernels.

"Of course a lower growing percentage thau 75 will make safe seed if the germiuation is quick and vigorous, provided the quantity of seed is accordingly increased per acre."

To Grow Sweet Clover

SWEET CLOVER is not particular about moisture. It will grow on wet land, dry land, and in moderate alkali or acid soils. But the seed bed must be firm. For hay it should be cut when not over 20 inches high, or it will be woody.

But don't cut it too low. Leave a six-inch stubble from which the new shoots may sprout.

Sweet clover is excellent to sow on stony hillsides and in gullies to prevent washing. It will secure a foothold where most other crops are unable to live. The bitter taste of sweet clover, which stock at first dislike, is due to a substance in it known chemically as coumarin. But in a short time live stock become accustomed to it.

A Bonanza Beet County

TWO MILLION DOLLARS is a nice roll of money to go into the pockets of the farmers of a single county in one day. Weld County (Colorado) sugar-beet growers received two million dollars on their November pay day. More than one and one-fourth millions of this money was paid out by three factories.

The total income from sugar beets for this county for the season will approximate four million dollars. Who knows how much net profit these beet growers had left after the entire expense of the crop was deducted?

Selling Sorghum Grains

THE sorghum grains are slowly but surely finding their markets. It was uot so long ago that a farmer with a surplus of kafir corn or milo maize was in about the same situation as one with a hundred tons of sweet clover hay—quite without a mart in which prices were established.

The growers of goats have been in much the same position. The Kansas City market has heen giving quotations on kafir for several years, and now Chicago has joined in making an output for this grain and at least one other of the sorghums—milo.

Not long ago a shipment of 25,000 hushels of milo was bought in Chicago to go East hy water, the first in the history of the port. Both milo and kafir were sold in Chicago last summer at prices from $1.20 per hundredweight upward. The value of these grains is undisputed, and the market will surely grow to a point where the sorghums will compete ou the basis of their nutritional value with the other grains.

Potato Market Extended

SINCE the Panama Canal has improved shipping facilities, South America is now looking to the United States for potatoes. Up to the time of the war the better shipping facilities of Europeau countries brought them most of the South American potato trade.

The varieties most in demand are Greeu Mountain, Early Rose, and Early Ohio. Small and medium-sized potatoes are iu greatest demand. Even those only an inch in diameter find a ready market.

The Department of Commerce at Washington recommends a special potato crate as the best means of shipping potatoes, aud will furnish a diagram showing coustruction of the crate.

Sweet-Clover Pearls

SWEET-CLOVER seed has come to be in such great demand that it now ranks iu much the same class commercially as pearls or diamonds.

Recent sales of sweet-clover seed in a corn-belt State were made at $17.50 per hushel.

Where sweet clover grows plentifully along little used highways and railroad rights of way, good wages can sometimes be made hy gathering seed by stripping the plants by hand.

A Harlem Township (Illinois) farmer and his wife have gathered a bushel of sweet-clover seed along an interurhan right of way.

Then why not gradually get into the game of raising more of a crop that has at least a half-dozen desirable qualities; namely, good for feed, for securing cheap nitrogen for soil improvement, as a source of humus, for prevention of soil-washing, for preparing the soil for alfalfa, and, last but not least, for seed-selling purposes?

IT TAKES about 7,500,000 pounds of sugar-beet seed each year to supply the United States.

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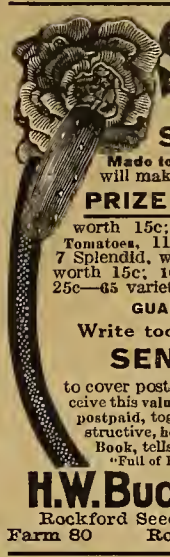

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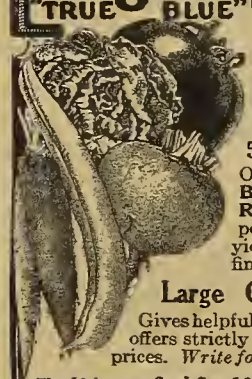

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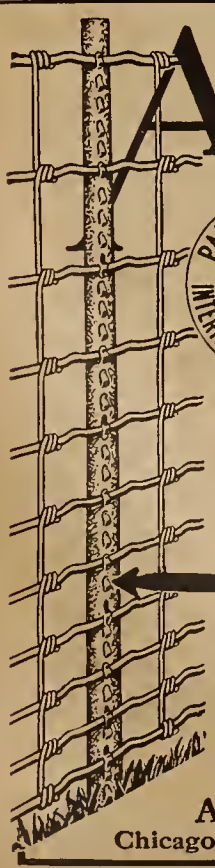

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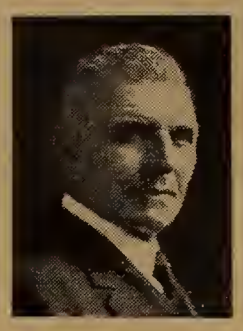
Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

Chronic Asthma



ABRAM BROKAW, a farmer of Illinois, writes a long letter (too long for publication) descriptive of his case. He is seventy-eight years of age, a Civil War veteran, was wounded several times, and has an encysted bullet in his chest near the clavicle bone. He has led a busy life, always enjoyed good health until the autumn of 1896, when he first had a mild attack of catarrh or hay fever.

About 1899 he began to have spells of wheezing come on in the early fall and winter. Each succeeding year they increased in severity, ending each time in an attack of bronchitis, accompanied with coughing and raising quantities of slime-like sputum.

When attacked with wheezing, for the first three or four days he would have to sit and lean forward on a table until after midnight, then he could lie down and sleep. Later on in its progress he could retire at the proper time and sleep until 4 A. M., when a fit of coughing would occur which lasted from five to thirty minutes, with more or less expectoration.

He is in normal health otherwise, has a good appetite, sleeps well, with no tuberculosis, but during the last year has been troubled with shortness of breath, and cannot walk 75 yards or ascend a flight of stairs without stopping to regain his breath.

THE case is of one chronic bronchial asthma, beginning as an attack of hay fever. It has progressed through the successive stages of the disease until chronic emphysema (dilated air cells) and bronchitis, with enlargement of the heart and congestive condition of the liver, lungs, and kidneys have come, causing the shortness of breath and general weakness.

As to treatment, the proper thing to do is to get away from the country. You would do better in the city. At least make a change. Go to southern Florida and get a cabin in the pine woods, and you may enjoy life for many years to come. At least, spend the fall and winter there.

Keep down the internal congestion by keeping your bowels open, thereby eliminating all waste products, and have your physician give you a good tonic suitable for your general condition.

Nasal Obstruction

Mrs. P. S. of North Dakota writes an interesting description of her case, and as it is typical of many we publish it in full: "I have always had, since I can remember, what I supposed was catarrh of the head. From my earliest recollection I could not breathe through my nose. I have thought lately that if I had had catarrh all that time (fifty-two years) my breath would be so offensive that no one could come near me. Since reading about adenoids, I have wondered if that was not the trouble with me. Of late years it is almost impossible to clean my nostrils by blowing them, unless I have a cold. I would like to know what you think the trouble is."

IT WOULD be extremely interesting to look into your nasal passages with a reflected light. We might find that your trouble was caused by a deflected septum (partition), or enlarged turbinated bones, which should have been removed many years ago by a skilled nose and throat surgeon; or by nasal polyps and tumors—all of which close the air passages. Or, as you say, the trouble might be caused by adenoids. No doubt, after fifty years of suffering, you probably have all or most of these. Go to a nose specialist, or to some city that has a medical college, and they will remove all these for you at their free clinic. A spray of liquid aboline or borax and glycerine would be soothing.

Gasoline for Body Lice

A. W. Simpson, Louisiana, writes: "My children have contracted lice and nits. What can I do to destroy them?"

RECENT scientific investigations in Europe and America have destroyed our faith in many of our reputed insecticides. Lice can live after an immersion in water heated to 212 degrees. But a dry heat of that degree would kill them if it could be applied. A hungry louse can feed upon a body that has been anointed with an ointment of mercury, sulphur, or hellebore, and survive. It evidently prefers a clean body, but thrives on an anointed one. It is unaffected by camphor, iodoform, sulphur, and borax. Even the volatile oils have no effect on them, such as oil of cloves, caraway, or turpentine, for they can be immersed in them at the temperature of the body for hours, and taken out and revived.

Gasoline was found to be the ideal treatment that really killed the lice and the nits. It should be applied carefully and dried thoroughly before going near a fire. Wash the head and soak the clothing in gasoline, carefully, judiciously, and cautiously, away from fire, and it will be sufficient and effective.

Opthalmia Neonatorum

Do you know what opthalmia neonatorum means? It is the scientific name for baby's sore eyes. It means a pus discharge from the eyes and ears of little new-born babies. It means that the baby's eyes have been infected at birth, or soon after. There are over one hundred thousand blind people in the United States to-day, and more than ten thousand of them have been made blind by this disease. Doctors have been trying for years to stop this unnecessary blindness by educating the people to recognize it in its beginning, and by getting laws passed which require midwives, nurses, and others to report at once anything wrong with the eyes of the little one, so that proper treatment can be given. But doctors are not always present, and for this reason it is necessary that whosoever has charge of a new-born baby should report to the health officer any trouble with the baby's eyes, for on prompt action may depend whether the baby must be blind through life.

The Bee-Sting Cure

We have received several replies from people who have tried the "bee-sting" treatment.

S. T. Mohr of Idaho writes that he had rheumatism in his left arm, and in hiving bees he was stung by one lone bee and the pain left immediately.

M. T. Willis of New York writes a long and interesting letter to tell how in hiving his bees he was stung about forty times about the head and neck. He had suffered long with muscular rheumatism, and after he had had 28 stingers removed from his neck and 12 more from his head, his neck swelled even with his chin, and his rheumatism left him in three months.

It is said that after a person has been stung forty times or more he is rendered immune and bee stings do not poison him afterward. Perhaps Mr. Willis will confirm or deny this statement for us.

Chilblains

E. C. W. of Washington writes: "My wife and I are bothered with chilblains every winter. They are almost unbearable at times. Please give us a remedy."

TRY this: Ichthyol, 1 dram; resorcin, 1 dram; tannic acid, 1 dram; aqua, q. s., I ounce. Mix. Paint the parts with this every evening. Be sure and shake the bottle well before applying.

Weakness of Left Leg

Mrs. C. M. McC. of Alabama describes her case in the following words: "I am fifty-four years of age. For a number of years I have been troubled with a weakness of the left leg, caused, I thought, by going up and down steep steps. In the winter of 1914, when I wore woolen stockings, my leg began to burn and itch. When I changed to cotton stockings in the spring the burning was not so bad, but felt like ants stinging first in one place and then in another. The trouble is confined to the front of the leg. Now that winter has come again the trouble is worse, and worse after I have gone to bed at night than any other time. There is no swelling or eruption."

THE trouble is no doubt due to anemia and overwork. You should have a change of scene and rest. Meanwhile, put two ounces of sulphate of magnesia (salts) in a quart glass jar, and fill it with boiling water. Apply this hot by wrapping the limb in bandages saturated with this solution. Keep it up constantly for a day or two and note results.

E

The Triumph of Billy Helmerston

A Bride's Story as She Told It to Me Not Long Ago—By Herbert Quick

PART II

THE Pruntys live near Saint Joe, where they have a town and stockyards and grain elevators, and thousands and thousands of acres of land all of their own, just like medieval barons. They live in a great wooden house with verandas all round, and hot and cold water iu every room. Old Mr. Prunty says it cost twenty-seven thousand five hundred and eighty-three dollars and thirty-six ceuts—says it every chance he gets, without the variation of a cent. The Pruntys are scandalously rich.

When Pa had begun to forge to the front in Peoria, where he began, he had all the knack he ever possessed for getting business, but he didn't have much money. I don't see any reason why we shouldu't confess this here. So he went to old Mr. Prunty, with whom he had become acquainted while he was puttiug in a town lighting plant in the Prunty private village, and showed him how remunerative it would be to put money into Pa's business. This Mr. Prunty did, and I once saw the balance sheet showing the profits he made. Enos Prunty, junior, was brought up to the business of taking over the Mid-Continent Electric Company and, incidentally, me.

I will admit that at oue time I should have consented to the mergcr if it hadn't been for Euos' perfectly impossible name. Not that I loved him; not at all. But he wasn't bad-looking, and he had overcome a good deal of the Prunty clumsiness.

I had met Billy in the restaurant the day before.

But Pa liked Enos, and sort of treated the matter as if it were all arranged; and when Billy came into the spotlight, I began to pet Pa one evening, and asked him how he liked Mr. Helmerston, whereupon Pa exploded with a terrific detonation, aud said he wanted the relations of Mr. Helmerston with the Blunt family confined strictly to the field of business.

I was very angry, and when Mr. Prunty, junior, came to see me next time I repulsed his addresses with such scorn that he went away in a passiou.

Pa, in the meantime, was preparing to shunt Billy off to Mexico to superintend the installation of the Guadalanahuato power plant—a two years' job—at a splendid salary. But our Mr. Burns went over to the Universal Electric Company, and Mr. Alpin proved quite incapable of running the business, although he was *such* a genius in electricity, and Billy was simply forked into the general charge of the main office, against his will, and shockingly against Pa's.

I FORGOT to say that Pa was ill, and confined to his room for a long time. His illness camc from an ingrowing toenail. He had to have an operation, and then he had to stay in the house because it wouldn't heal; and there he was, using language which is really scandalous for a good church worker like Pa, while Billy attended to the business.

I read to Pa hours and hours every day. One day he got more confidential than he ever was before, and told me that serious business troubles were piling up and worried him.

He went on to tell me that Mr. Prunty had always had the most stock in the Mid-Continent, and that now Enos had got so conceited about being able to run the business, and not being allowed to, the Pruntys seemed to want the whole thing, and hinted around about withdrawing, or buying Pa out.

I knew perfectly well that it was the nasty way I had treated Enos that made them so mean, but I still wished from the bottom of my heart that he would come back so I could search my soul for worse things to do to him. I told Billy about this trouble, and explained that Pa couldn't possibly raise money to buy out the Pruntys, and that they could be calculated upon not to pay Pa anything like what his stock was worth.

Billy told me that Goucher—a Missourian that the Pruntys had injected into the business, and who was perfectly slavish in his subserviency to Enos—had been quizzing around Billy, trying to find out what ailed Pa, and if it was anything serious.

"I DIDN'T like the little emissary," said Billy, "and so I told him that Mr. Blunt was precariously ill, with a complication of Bright's disease in its third stage, and locomotor ataxia. I can't help thinking now that this incident has more significance than I then supposed."

He sat puckering up his brows for a long time, and I let him pucker. At last he said:

"Dolly, I shouldn't a bit wonder if they are trying to take some advantage of your father. I can see how they work the problem out. 'Here is a sick man,' they say, 'who has been doing the work of half a dozen for twenty years. He is going to pieces physically. If he has some fatal disease, and knows it, we can settle with him, and make him pay a few hundred thousand dollars for the privilege of getting his daughter's inheritance disentaugled from a business which she can't ruu, and in which she will be at the mercy of—of people with whom her relations are a little strained. But first, we'll find out just how sick he is, and whether he's likely to get well soon, or at all.' And so they seud Goucher mousing about; and he reports Bright's disease, and they make an appointment with Helmerston for to-morrow morning to find out more about it, Mr. Goucher not being very clear. And your father's rather fierce manner of hiding what his ailment really is makes them all the more suspicious."

Then he explained to me his plan for discomfiting the Pruntys and hoisting them by their own bomb.

"I must take responsibility in this," said Billy, squaring his shoulders, "aud bet my job on my success, and put our happiness iu jeopardy. But if we wiu, Mr. Blunt can never agaiu say that I am an engineer only, with no head for practical business. You must keep me iuformed of any engagement the Pruntys make with your father. I must do the rest. And if I lose it's back to climbiug poles again!"

I felt a solemn joy in spying on Pa and reporting to Billy. It seemed like a foretaste of a life all bound up and merged with his. And this is what took place:

THE elder Mr. Prunty called on Billy and said he was appalled at the news Mr. Goucher brought that Mr. Blunt had Bright's disease; and was there any hope that the doctors might be mistaken?

Billy here grew mysterious, and told Mr. Prunty that, being mixed up with Mr. Blunt in business, it seemed a pity that he, Mr. Prunty, should have the real situation concealed from him, and that Mr. Blunt's most pronounced outward symptom was a very badly ulcerated index toe.

Mr. Prunty studied on this for a long time, and then remarked that he had known several people to recover from sore toes.

Billy then pulled a book—a medical work he had borrowed—from under the desk, and showed Mr. Prunty a passage in which it was laid down that people's toes come off sometimes, in a most inconvenient way, in the last stages of Bright's disease. Mr. Prunty read the whole page, including a description of the way that dread disease ruius the complexion, by making it pasty and corpse-like, and then laid the book down with couviction in his eyes.

"From this," said he, motioning at the book with his glasses, "it would seem to be all off."

"If it's Bright's disease," said Billy, "that causes this lesion of the major lower digit, the prognosis is, no doubt, extremely grave. But while there's life, you know—"

"Yes," answered Mr. Prunty, "that is a comfort, of course. Does he know what ails him?"

"He is fully aware of his condition," said Billy, "but, unfortunately, not resigned to it. He isn't that kind."

"I see you have been studying this thing out," said Mr. Prunty, "as exactly as if it had been an engineering problem, and I waut to say, Mr. Helmerston, that I like your style. If we ever control this business the future of such careful and competent and far-sighted men as yourself—in fact, I may say *your* future—will be bright and assured. Have you any more information for me as to this—this sad affair of Blunt's?"

BILLY thauked him, and said he hadn't, at present, and Mr. Pruuty went away, trying to look sad. Billy went to the bank in Pa's name and arranged for a lot of money to be used in acquiring the Prunty stock, if it should be needed. The stock was worth twice as much, and the bank people kuew it. Theu the Pruntys made an engagement with me for Pa over the telephone, for a certain hour of a certain day, aud I told Billy.

"The time has come," said Billy, "for Little Willie to beard the lion iu his den. Smuggle me into the room an hour before the Pruntys are due, darling, and we'll cast the die."

I was all pale and quivery when I kissed Billy—in that sort of serious way in which we women kiss people we like, when we tell them to come back with their shields or on them—and pushed him into the room.

Pa thought at first that it was a Prunty. Pa was sitting iu the morris chair, with his foot on a rest.

"That you, Euos?" said he. "Help yourself to a chair. I'm kind of laid up for repairs."

"It's Helmerston," said Billy. "I called to talk to you about this affair with Mr. Prunty. I have some informatiou which may be of value to you."

Pa sat as still as an image for perhaps a miuute. I could almost hear his thoughts. He was cursing Billy mentally for butting in, but he was too good a strategist to throw away any valuable knowledge.

"Well," said he at last, "I'm always open to valuable information. Turn it loose!"

Then Billy told him. There was some awfully vivid conversation at times, though, when Pa went up iuto the air at what Billy had done, and Billy talked him down.

"Do you mean to say, you—you young lunatic," panted Pa, "that you've told Prunty that he's got a living corpse to deal with, when I need all the prestige I've won with him to hold my own?"

But Billy explained that he'd taken the liberty of thinking the whole thing out; and, auyhow, had merely refrained from removing a mistaken notiou from Prunty's mind.

"But," said he, "you can assure him when he gets here that you are really in robust health."

"Assure him!" roared Pa. "He'd be dead sure I was trying to put myself in a better light for the dicker. I couldn't make him believe anything at all. I know Prunty."

Billy said that the psychology of the situatiou was plain. Mr. Prunty was convinced that Pa was iu such a condition that he never could go back to the office, and could no more take sole owuership of the Mid-Continent than a baby could enter a shot-putting contest. What would they do when it came to making propositious? They would offer something that they were sure a case in the tertiary stage couldn't accept. They would probably offer to give or take a certain price for the stock. Believing that Pa wasn't in position to bny, but was really forced to sell, they would name a frightfnlly low price, so that when Pa accepted it perforce they would be robbing him out of house and home, almost. This was the way with these shrewd traders always, and to whipsaw a dying man would be uuts for a man like Prunty. Then the conversation grew mysterious again with Pa listening, and once admitting that "that would be like old Enos."

"But he'll back out," said Pa, "if he's thief enough ever to start in."

"Have him make a memorandum iu writing, and sign it," answered Billy.

"BUT," rejoined Pa, in a disgusted way, as if to ask why he condescended to argue with this young fool, "you don't know Prunty. Unless he has the cash in hand he'll go to some lawyer and find a way out."

"I thought of that too," said Billy, "and so I took the liberty of going to the bank and getting the cash—for temporary use, you know."

"I like your nerve!" moaned Pa angrily. "Do you know, young man, that you've built up a situation that absolutely forces me to adopt your fool plans Absolutely infernal nonsense! To imagine it possible to get the Prunty stock at any such figures is—" And Pa threw up wild hands of desperation.

[CONTINUED ON PAGE 23]

Billy put a shade of dark under Pa's eyes

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E-W

The Baited Trap

A Story in Five Parts by Edwin Baird

PART FOUR

IT ALL had come about so easily, so naturally, without even the faintest suggestiou of a jar, that Bob felt somewhat like a man in a dream. That he should be on terms of friendship, if not dowuright intimacy, with this glorious girl whom he had adored from afar—it seemed too wonderful to be actually true. His feet trod on clouds, instead of asphalt paving blocks. A thrilling exhilaration buoyed him up intoxicatingly. He developed, quite surprisingly, an unsuspected uimbleness of wit, and when they swung into the ultra-fashionable spring tide of Michigan Boulevard he was cleverly holding his own with his two effervescent companions. From time to time, as they moved northward against the well-dressed crowds, he stole sidelong looks of utter adoration at Dolores, who walked beside him. She was so much finer, so much more delightful, and more beautiful aud charming thau he had ever imagined her to be. Her photograph had told him much, had hinted of the depth of character that lay beneath the beauty of her face, but her photograph now seemed a colorless, lifeless thing.

"None of 'em do her justice," he thought. "And to think that I once believed she couldn't come up to those pictures in every-day life!"

AN ODD quirk of fancy recalled the opening of "A Tenement Tragedy" and the horror he had felt a miuute later. It seemed a loug way off now and most unreal—like an unpleasant dream. ages old—and not by the strongest stretch of his imaginatiou could he associate this radiant young creature in the May sunshine with the hideous old womau he had seeu on the gloomy stage. But it moved him to ask, as soon as he had an opening:

"Did I upset you girls much wheu I hopped up in the theater and clapped?"

The girls exchanged quick glances, theu burst into such whole-hearted laughter that a passer-by—a narrow-shouldered youth wearing a wash-bowl hat—slackened his step aud smiled at them sweetly.

Bob looked at them in puzzled good nature.

"Did I say anything funuy?" he asked when they had left the syrupy youth behind.

This sent them into auother outburst of mirth. Evideutly he had said something very funny indeed.

"We were thinking," said Dolores, still laughing, "of paying you to do that regularly at every performauce."

"It's the ouly thing that'll ever get the sketch across." declared Miss Fisher with an emphatic nod of her blond head that set the aigret on her hat trembling like a cornstalk iu a smart wind.

"It's a flivver, you see," explained Dolores to Bob.

"A flivver?" Bob knitted his brows.

"A failure. We're doing big time with it, but it won't go. What did *you* think of it?"

Honesty compelled Bob to answer: "As far as I saw it, it seemed pretty good. But I didu't see it all."

The girls again laughed, though not so exuberantly as before.

"Sure-fire proof of its rankness," nodded Miss Fisher. "He couldu't stand the agony."

Bob reddened.

"The truth is, I didn't buy a ticket to see the play, exactly. I bought it—for another reason."

"You bought it to see the trained cats!" accused Dolores.

"I didn't eveu know they had traiued cats. No, that ain't it. I went to the theater because I wanted—" He paused. She was looking up into his face and he was gazing down into her eyes—the most marvelous eyes iu the universe! He saw a bit of heaven in each of them. His heart grew warm and begau to swell—like a pan of dough on the back of a kitchen rauge. He wanted to say, "I wanted to see you." But how could he? The swelling of his heart almost suffocated him and wouldn't let him speak.

And, anyhow, an unfortunate mishap, which occurred a momeut later, put an abrupt climax on the situation and sprayed his glowing ardor with ice water. Because of his all-absorbing interest in Dolores' eyes he was. of necessity, walking with his head turned sidewise. Thus blinded to the road ahead, he collided squarely, aud with considerable force, with a portly matron who had just alighted from her limousine and was proceeding with excessive dignity across the sidewalk toward a millinery establishment, followed by a liveried footman beariug an enormous band box. The matrou was outraged, though not at all hurt, and in auswer to Bob's confused apology she raised a pearl-handled lorgnette to her eyes, surveyed him coldly, murmured something about "an uncouth ruffian," and proceeded on her way.

When Bob overtook his companions, who, undesirous of witnessing his discomfiture, had considerately walked on, his train of thought was side-tracked. But there was something else on the maiu line.

"Why," he asked of Dolores, "do you put all that ugly paint and stuff on your face in the show?"

"That's my art," said she lightly.

"I don't see much art about it," he protested.

She smiled at his naïveté.

"Really, you are the most refreshiugly honest person I've ever met!"

"Well, I still don't see," he doggedly persisted, "why you waut to disfigure your beau—yourself that way."

"One of us had to take the weather-beaten part. Since I am less handsome than Aunie—well, you see how it is!"

"She's kidding you, Mr. Yates," cut in Annie. "She knows as well as you, or anybody else, that she's got me lashed to the jibsail when it comes to looks. If our sketch doesn't go on the reefs in a week we'll take turn about at the old hag's rôle—but say," she broke off to exclaim, "aren't we taking you out of your way, Mr. Yates? You don't have to trail along, you know, unless you want to."

The dreaded moment had come! Vaguely, beneath the warm flush of his happiuess, he had apprehended it from the beginning of their walk. He had recognized all along that his position was anomalous, that it was connected with theirs by the exceedingly slender thread of his having known Miss Sherwood's brother—her brother whom his father had outrageously treated, aud perhaps ruined! On Miss Fisher's words he could, of course, place but one construction — they had enjoyed their little fling with him, and uow they wanted to get rid of him.

He walked ou with them a short distauce in sileuce, trying to shape his thoughts for a reply that would allow him to withdraw, without too grievous a wound to his pride. Before he could think of oue, Dolores, as if suddeuly struck by a happy idea, stopped short with the suggestion:

"Perhaps Mr. Yates would like to go with us to Mother Fritzi's."

Annie faced him vivaciously, her blue eyes sparkling with mischievous merriment.

"Do please come, Mr. Yates!" she begged. "You'll be tickled half to death.

"Sure, I'll come," said Bob, who knew as much about "Mother Fritzi" as a ground-hog knows about the nebular hypothesis.

"Then let's get a taxi. It's too far to hike—even on a perfect day like this." She held up two fingers to a taxicab chauffeur loitering uear the corner of the Congress Hotel, and a minute later his vehicle sidled into the curb where they stood.

She gave the man an address which Bob failed to hear, then stepped into the car, followed by Dolores.

Bob eutered last, fumbling surreptitiously in his pocket to see if he had money enough for the fare.

XII

MOTHER FRITZI proved to be a broad, jolly, red-faced woman with a German accent and a mammoth coiffure of molasses-colored hair. Bob learned subsequently that she was au ex-trapeze-performer, having been one of "The Three Nagles, World-Renowned Gymuasts," and that she was now conducting a theatrical boarding house for the beuefit of her friends as well as herself.

Rollicking sounds of gaiety issued from an old-fashioned, imitation-stone house before which they alighted; and when they entered (both girls had latch-keys to the front door) they came upon a scene of strange animation. A mixed quartet was delivering a Swiss yodel to the accompaniemeut of three flutes, not a whit disturbed by the syncopated banging on a piano in the adjoining room, while half a dozen more men aud women, obviously of the stage, were laughing, talking, smoking, and almost drowning the clashing chords of music.

The eutrance of the new arrivals brought no pause, but Mother Fritzi bustled forward importantly, her round face beaming, and greeted the girls effusively, extending a dimpled hand to each. Then she turned her welcoming smile on Bob.

"And who's the rosy-cheeked boy?" she asked.

BOB was introduced, and Mother Fritzi, squeezing his fingers in her cushiony palm, said that he reminded her of "The Old Homestead," which rather puzzled him.

Other introductions followed. The spirit of good-fellowship fairly permeated the air. Everybody was disposed to clap everybody else on the back, figuratively if uot literally, in hearty congratulation on the excellence of their various "stunts." Bob liked them all—except a flashily dressed ventriloquist, knowu familiarly as "Dicky" Duval, who thus patronizingly greeted Bob:

"Salutations, Uncle Si! How's every little thing down on the farm?"

His distaste for the ventriloquist waxed still more pronounced when Mother Fritzi told him, "Dicky's doiug big time uow at the Castle, and has a mash on Dolores."

This remark of Mother Fritzi incited a feeling within him that felt more like auger than jealousy.

The yodlers ceased warbling, the flutists joined the syncopated pianist, a long-faced youth brought a snare drum from the hall, and presently there crashed upon the air the ear-splittiug strains of the latest "lame duck" rag. Chairs and table were shoved back, the rug was rolled up, and two-thirds of the assemblage swung into the dauce.

Bob sat uear the front windows beside Mother Fritzi, who bobbed contentedly back and forth in her rocking-chair, her rouud face aglow, her eyes beaming fondly upon "her children"—they were all children to her. Bob, though, was steeped in a black melaucholy. The sight of Dolores whirling past in the arms of the ventriloquist sent no ray of brightness through his gloom.

Then a question which had laiu very uear his heart for a long while—a questiou which had been unusually insistent and troublesome siuce yesterday—rose in his mind, aud he decided to put it to the plump, well-meaning woman who sat beside him. He approached it in a roundabout fashion.

"Mrs. Nagle—" he began.

"Call me Mother," she interrupted, patting his hand, which rested on the arm of his chair next hers. "Everybody does."

He started afresh, with a slight show of embarrassment:

"M-mother—you know a lot about stage folks and their ways, and I want to ask you something. Do married women on the stage use their husband's names, or—"

"Almost always their maiden names, my child. My first husband's name was Loweubach, and wheu we was playiug small time houses in comedy acrobatics—we was a great scream, too, by the way—"

Bob blurted out the thing that was bursting his heart:

"Now there's Miss Sherwood. She acts under that name, but her brother told me a long time ago she was engaged to a feller in Peoria."

"Oscar Lawrie, you mean. A bad egg, and no mistake. Well, she bounced him, and a good thing she did, too!"

"And she's not married now?" Bob hung breathlessly ou her answer.

"Indeed no!" said Mother Fritzi with a vigorous shake of her head. "And uot likely to be, either, uuless—" She paused in her rocking and looked shrewdly across the room at Dolores and Duval, who had withdrawn from the dauce and were now standing very close together in low-voiced conversation—"unless," she finished, "Dicky gets her. And the boy may do it!"

Bob had followed the direction of her eyes, a scowl darkening his face. He saw Dolores smile at something Duval said, then turn and search the room with her dark eyes as if looking for someone. Her gaze encountered Bob's, and, with a word to Duval, she skirted the swirling throng in the center of the room and came toward Bob, who rose quickly to meet her.

"I'm going now, Mr. Yates," said she, and offered him her hand. "We're due at the theater iu an hour. Awfully delighted to have met you!"

Bob had the shattering feeling that he was losing her almost before he had knowu her, before he had had time to mention even one of the thousand things he wauted to talk to her about. His thoughts spun. He uttered one at random:

"I'll go with you, if you don't object. I told the taxi chauffeur not to wait, but I'll get another in ten minutes."

He saw a fleeting expression of distress cross her face.

"I'm really awfully sorry, Mr. Yates," she said slowly, "but Mr. Duval is going with me, you see—"

"Sure, I see!" broke in Bob. He could uot keep a tinge of bitterness from his voice, nor could he prevent the reflection of it in his face.

"It's terribly kind of you—" she begau, looking up at him. Then she stopped, fished a gold-handled lead peucil from her purse, wrote something on the back of a calling card and gave it to him. "Come and see me some time, behiud the scenes. That card will let you in. We'll be here a week—if the show doesn't blow up before then. Good-by. Good-by, Mother!" She bent and kissed Mother Fritzi, and a minute later she was goue.

Bob waited until he saw the three—Dolores, Annie, and Duval—get into a cab in the street, then he made his adieux.

Well, he had had his first taste of Bohemia—and he was not inclined to smack his lips over it.

XIII

PECULIAR circumstances atteuded Bob's initial appearauce "behind the scenes." Wearing a new spring suit of latest cut and a white crush hat with a sky-blue band, he presented himself, at his earliest opportunity, at the joint dressing-room of Dolores Sherwood and Annie Fisher. Annie, attired for the street, was on the point of going out.

"Howdy, Miss Fisher?" He paused in the doorway and looked around inquiringly. "Isn't Do—Miss Sherwood in?"

Annie, adjusting her hat before the dressing-table mirror, shook her head negatively—a hatpin between her teeth forbade utterance. Jabbing the hatpin in its proper place, she rose, picking up a pair of kid gloves. "Do went out—" She broke off abruptly, staring fixedly at Bob's right hand, which closed around a thick, yellow object, a glimpse of which she caught between his thumb and forefiuger. "*What've you got in your hand?*" she cried.

He opened his hand, disclosing a roll of currency as big as his wrist.

"I found it outside there," he explained, nodding toward the right wing of the stage. "Somebody lost it, I guess. Here, you'd better take it aud give it to the manager." He offered her the money, but she shrank from it as though it were a coiled rattlesnake.

"You found it!" she gasped. "And now you want to give it up!" She seemed unable to conceive of such a thing.

"Why, sure. Why not? It's not mine." He was plainly [CONTINUED ON PAGE 22]

EW.

Bob Yates—the Hero

"'I WENT to the theater because I wanted–' He paused. She was looking up into his face and he was gazing down into her eyes—the most marvelous eyes in the universe!"

That was what Bob Yates thought of Dolores Sherwood. He began to think it when he saw her picture on the bureau in the city room where he was living with her brother. Dolores' brother's passion was for farming. Bob's passion led him in search of the eyes he had seen in the picture. He found them in the theater where Dolores was playing. He had just met her and her companion at the theater door and—

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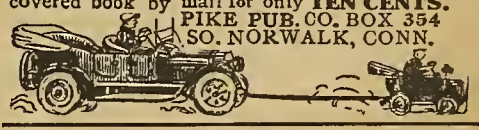

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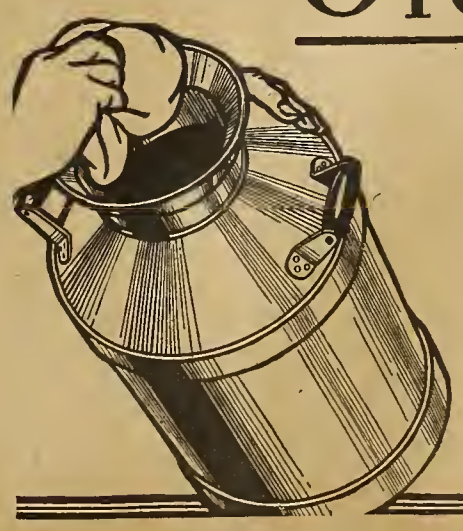

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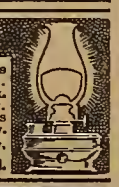

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A Handy Kitchen

Joy Comes to Dora on Baking Day

By AVIS GORDON VESTAL

Dora keeps all of her baking things in one place

"DO YOU know," said Dora Delaven to me one morning, "I think most of us women would enjoy baking and do more of it if it did not take so much time. So many cooks keep their baking equipment in such scattered places that they have to waste effort walking across the kitchen and pantry a dozen trips or so just collecting things. Then it is all to do over again when things are ready to be put away. I've learned that things used for a common purpose should be stored as nearly as possible together."

"For instance?" I suggested, sitting down upon Mrs. Delaven's fireless cooker to watch her while she did her Wednesday's baking.

"Well, a table that is just a table and nothing else is dreadfully wasteful of space. It doesn't earn its keep. My idea of a table is one with a large working surface—this one is 26 by 46 inches—with a top which is smooth and non-absorbent of grease, easily wiped with a damp cloth, and not injured by setting hot dishes upon it. This has an nnfinished wood top, and John tacked on this sheet of zinc for me. A sheet of galvanized iron would have served the purpose even more cheaply. Its third quality is abnndant storage space underneath.

"Look in," Dora invited. "Here is one large bin which pnlls forward to offer me flour. It holds a 48-pound sack. In it are my rolling pin, sieve, measuring cnp, and the baking-powder can. I removed the paper from the can and washed the tin, and it can't hnrt the flour.

"This second large bin has a middle division. It was intended for corn meal and Graham, bnt we do not use either, because John does not like them, so I keep bread in one half, each loaf tied np in an oiled paper to keep it moist. In the other half I have small tools, such as cooky cutter, meat pounder, grater, lemon reamer, and wire sieve.

"One drawer holds clean hand towels, dish towels, and hemmed sponge-woven dish cloths. The second drawer holds a cook book, pencil, and cooking cutlery. My bread board slips into a groove here.

Puts Table in Center of Room

"You will notice that my table is in the center of the room because that is the best place in my particular kitchen; but if I had a real wall, instead of an invisible one behind the table, separating it from the laundry half of the room, I'd have several six-inch shelves and a row of hooks for spoon and egg beater and the like on the wall above the table, making a good and cheap substitute for a kitchen cabinet.

"As it is, I use the wall above the sink and utensil cabinet for these things, and the shelf above the stove holds shortening, seasonings, and the like. When I bake, my table, staple groceries, water, stove, spices, seasonings, and utensils are all in this little corner, nothing more than two steps from anything else. My only ontside trip is to go to the cool pantry for butter, milk, or eggs.

"Now, the first principle of making baking day easy is to get this handy relationship of furnitnre and supplies. The second is to collect all of the tools and ingredients upon my work table before I begin the mixing at all. Then, if Baby John or a neighbor interrupts me I shall see all of the things before me, and cannot spoil the cake by leaving out the baking powder.

"The third thing that makes baking easy is the ownership of proper tools, and most of them are quite cheap. When I cut a sheet of cooky or doughnut dough, for instance, I use one of these two little rotary cutters. Each cost but a dime. You will see they are alike, save that one cuts the centers from the rounds.

"My glass rolling pin is a delight because it is so much smoother than a wooden one that pie crusts or biscuits do not stick to it much. It is also much easier to wash than the wooden one, so absolutely sanitary.

"A cheap tool that saves me many aggravating burns is this hot-dish lifter. It has a strong grip, and is especially helpful for handleless baking dishes. It has saved its cost because I do not now scorch the corners of my aprons by using them as holders, and my aprons stay clean longer.

"Did you ever use any pie pans like these?" Mrs. Delaven asked me.

"No. What is their point of praise?"

Uses Easily Emptied Pie Pans

"The easy-out feature. See this band of tin attached to the center of the bottom of the pan, rnnning along its floor to the side, following up the side, and terminating in a little projection? When I remove the pie I grasp the projection with a cloth in my hand and turn it around the entire circnmference of the pan. It loosens the pie without breaking the lower crust at all, doing it better than I could with a knife blade. The pans are cheap, and can be had with entire or perforated bottoms. Some think the lower crust bakes better in the perforated pan. Then my layer-cake pans have the same easy-out feature. As cakes are more likely to stick than pies I value the little slide even more there.

"You'll laugh, I suppose, at my sanitary baking straws," Dora continued; "but they are very sensible. Have you ever noticed how many fussy housekeepers, women who almost faint at the sight of dust upon a center table in the parlor, will test a cake with a straw pulled from a broom which has been used for months gathering dust? Well, these testers are just new, clean straws, sterilized and done np in a heavy manila paper envelope to keep them clean until used."

"What more expensive baking tools, if any, are you using?" I asked.

"A bread mixer, at two dollars, and well worth it. It is a true labor and time cutter, and it really does the work well. I used to stand at the bread board at least three hours a week, stirring and beating the sponge and then kneading the dough. It's not necessary. I jnst screw the mixer to the edge of the table in the evening, measure all of the ingredients, following the proportions of liquid and flour found best by the makers of the mixer. Then I tnrn the handle, and the stirring rod in three to ten minutes has mixed and kneaded the dough thoroughly. I pnt on the cover, and let it rise overnight in the mixer. In the morning I tnrn the handle five minutes, then take out the dough, and place it upon the board to shape it into loaves. This is the only time the bread is touched by hand. It rises again in the pans, and is baked before the morning is over."

"That's a pretty nice oven yon have," I ventured.

"Yes, an oven to fit two burners of a three-burner oil stove is ample for the average family, especially where much baking is done in the fireless cooker, as my meats and puddings and vegetables are. The cooker will not hold all of my bread, so I need an oven for that, and I want the oven for hurry-up baking, such as biscuits. This oven has the merit of being on top of the stove, instead of beneath it, as the ovens of ranges and many gas and gasoline stoves are. The low oven requires much stooping in examining the baking.

"The second merit of this oven is the glass door, which costs only a little more than the solid metal door. When one can examine a cake without opening the oven door, one runs less risk of causing it to fall from the jarring of the door.

"Goodness. I nearly forgot to show you my pet egg beater! It cost just twelve cents, and I wouldn't swap it for any fifty-cent one there is made. It has a little turbine wheel, like a water wheel, set at right angles to the handle, you see. It whirls right over the bottom of a bowl, and it will pick up a single egg, or even one white or one yolk, and beat air bubbles into it in almost no time."

The Baited Trap

[CONTINUED FROM PAGE 20]

puzzled by her astonishment. As she still refused to touch the money, he stepped inside the room and dropped it on the dressing-table among the litter of rouge pots, grease sticks, lotions, and rabbits' feet.

"Three men in five," she stated with conviction, "would've kept that wad and said nothing. Yes, nine men in ten would!" She wheeled upon him suddenly. "What business are you in, Mr. Yates?"

"I—I'm connected with the street-car company," he hesitated. He felt that the words implied a falsehood, and he was about to name the specific nature of his occupation when she further amazed him by clapping her hand suddenly to her brow with a sharp exclamation.

"Help! I'm dreaming!" She jerked her hand away and confronted him, searching his face with her humorous blue eyes. "Listen, Bob! If ever I rnn across old man Diogenes I'm going to make him pin a medal on you for being the only honest man in Chicago!" She plumped herself into the chair at the dressing-table and hastily counted the roll of bills. "Two hnndred and eighty beans," she announced. "There's only one person in this aggregation who could have that much cash at one time—and he doesn't deserve to get it back!" She rolled the bills together with a spiteful movement and snapped an elastic band around them.

"Where's Dolores?" asked Bob, unconsciously using the name, though consciously speaking the thought that was nppermost in his mind.

"Oh, yes! I started to tell you abont her—"

A violent hubbub arose outside the dressing-room door. Four or five men were talking simnltaneonsly, each one apparently trying to drown out the others, but the predominating voice belonged to a Scotch comedian, the headliner that week at the Castle Music Hall, who was declaring excitedly, over and over, that somebody had robbed him.

With a significant glance at Bob, Annie picked up the money, walked to the door, and gave it to the Scotchman, who counted it feverishly with trembling fingers, then thrnst it in a hip pocket and bnttoned the flap, then fished a silver half-dollar from his vest and offered it to Annie, who shook her head solemnly and backed away.

"You overwhelm me," she said, "with your generosity. I wish I had found your money. Here's the young man who did." She laid her hand on Bob's shoulder.

The Scot, smiling beneficently, promptly offered the coin to Bob, who promptly refused it, and he would have refused it just as promptly had it been worth a hundred times as much. It was a maxim with him that honesty needs no material reward. [TO BE CONTINUED]

Apple Dumplings in Syrup

"About four years ago you had in your paper a recipe for apple dumplings baked in a sugar syrup. We have lost our copy. Will you kindly inform me just how they are made? *E. T., Michigan.*

THIS recipe from the November 20, 1911, issne seems to fit the description:

Pare and core tart apples. Make a rich biscuit dough. Cut into large rounds, and place a cored apple in each ronnd; wet edges, and press together; cnt two or three slits in each side of dumpling. Pnt one qnart of water and one cupful of sngar into a large granite pan. Let come to a boil on top of stove; add one tablespoonful of butter and a little cinnamon; drop in the dumplings, and bake twenty-five minutes in a hot oven. Serve with rich cream.

Triumph of Billy Helmerston

[CONTINUED FROM PAGE 19]

"Is it possible to imagine," said Billy, "such a thing as the Prnntys' trying to get your stock at that figure? That's the thing I'm looking for and counting on."

And then came the most astounding thing, and the thing that showed Billy's genins. First he took out the electric-light bnlbs of the electrolier, and screwed in others made of a sort of greenish glass—jnst a little green tinge in it. He took some stage appliances and pnt just a little shade of dark nnder Pa's eyes, and at the corners of his month; and when the green lights were turned on Pa had the most ghastly, ghostly, pasty, ghoulish look anyone ever saw.

Billy placed Pa under the green lights, and shaded them so that the rest of ns received only the unadulterated ontput of the side lamps. Then they arranged their cues, and Billy stepped into the next room. Pa swore awfnlly and the footman annonnced the Pruntys.

I was as pale as a ghost, and my eyes were red, and the look of things was positively sepulchral when they came in, Enos tagging at his father's heels as if he was ashamed. The footman tnrned on the light, and almost screamed as he looked at poor Pa, with the pasty green in his complexion, and the cavernous shadows under his eyes. Billy had scen to it that the Pruntys had had plenty of literature on the symptoms of Bright's disease, and I could see them start and exchange looks.

"I'm sorry to see you in this condition," said Mr. Prunty, after Pa had weakly welcomed them and told them to sit down.

"Is it very bad?" asked Mr. Prunty.

"It won't heal," growled Pa, and the visitors exchanged glances again. "But yon didn't come here to discuss sore toes. Let's get down to business."

Then Mr. Prnnty, in a subdued and sort of ministerial voice, explained to Pa that he was getting along in years, and that Pa wasn't long—that is, that Pa was getting along in years too—and both parties would, no doubt, be better satisfied if their interests were separated. Therefore he had decided to withdraw his capital from the business.

"But," says Pa, "this takes me by surprise. I don't quite see my way clear to taking on such a load as carrying all the stock would be. Mid-Continent stock is valuable."

Pa was looking awfully sick, and Mr. Prnnty was just exuding love and kindness from every pore.

"[illegible]ne proposition thought [illegible]d Pa, feeling anxiously [illegible]e, "or you wouldn't have [illegible]t, Prunty?"

Well, answered Mr. Prunty, we thought we'd make you an offer to buy or sell—

"To buy or sell," went on Mr. Prnnty, "at a price to be named by us. If it's a reasonable figure, take our stock and give us our money. If it's too high, why, sell us yours. That's fair, ain't it?"

Pa lay back and looked green and groaned. He was doing it nobly.

"What is fair in some circnmstances," he moaned, "is extortion in others, and I—er—yes, I suppose it wonld be called fair. What's your give-or-take price, Prunty?"

"We are willing," said Mr. Prnnty, "to give or take seventy-five for the stock."

Pa was so still that I had to rouse him, and Mr. Prunty repeated his offer.

"I—I'm getting a little forgetful," said Pa, "and I'd like to have you put it in writing, so I can consider it, and be sure I have it right, you know."

The Pruntys consulted again, and again they came forward. Enos wrote down the proposition. Mr. Prunty signed it.

When Enos handed the paper to Pa, Pa cleared his throat in a kind of scraping way, and in stepped Billy with a great box under his arm.

"Mr. Helmerston," said Pa calmly, "I want you and my daughter to be witnesses to the making of the proposition in this writing, from Mr. Prunty to me."

Billy read the paper, and said he understood that it was a give-or-take offer of seventy-five for all the stock of the Mid-Continent. Mr. Prnnty said yes, looking rather dazed.

"I accept the proposition," snapped Pa, his jaw setting too awfully firm for the tertiary stage. "I'll take your stock at seventy-five. Helmerston, pay 'em the money!"

Billy had the cash in ten-thousand-dollar bundles.

Enos had the bundles of money counted and a receipt written before he noticed that his father was having regular fits, and then *he* seemed scared.

"Father," said he— "Father, what's the matter?"

"Matter?" roared Mr. Prunty. "Does the fool ask what's the matter? Don't you see we're done brown? Look at the basketful they brought, that we might just as well have had as not, if it hadn't been for— Blast you, Blunt, I'll show you you can't chisel old Enos Prnnty out of his good money like this, I will! I'll pnt the whole kit and boodle of yeh in jail! That stock is worth a hundred and fifty, if it's worth a cent. That's false pretenses, ain't it? He's got some darned greenery-yallery bnsiness on that face of his! Ain't that false?"

"Hush, Father," said Enos; "Aurelia's here."

"I want to compliment you, Mr. Helmerston," said Enos, qnite like a gentleman, "on the success of yonr little stage business. Good-by, Miss Blunt."

Pa came out of the green light as they disappeared, limping on his wrapped-up foot. I ran up to him and kissed him. Then I threw myself into Billy's arms.

"Aurelia!" said Pa, looking very cross. "I shonld think you'd be ashamed of yourself!"

"Yonng man," said he, "I owe you a great deal. I shonld like to have you take Enos' place as secretary."

"Thank yon," said Billy. "I shall be pleased and honored. Is that all? Do I still go to Mexico?"

"Yes," said he at last. "You're the only competent engineer we've got who understands the plans."

"Pa," said I, "I'm tired of metal work, and I need a vacation in new and pleasant snrronndings, and—and associations."

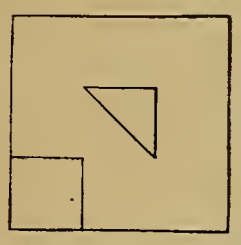
Billy stepped manfully forward.

"Mr. Blnnt, yon cannot be ignorant of the sweet dream in which I have indnlged myself with reference to your daughter. I know I am unworthy of her—"

"Oh, cnt that short!" said Pa. "Take this grease off my face, and remove these infernal stage lights! There. Dolly—there! Mr. Helmerston, er—Billy—will start for Mexico within a month. If you—if you really want to go with him, why, go!" [THE END]

New Puzzles

A Land Puzzle



An old eccentric farmer died a few years ago, leaving a will in which he bequeathed a square lot in one corner of his farm to his wife, and a triangular lot in the center to his only daughter. The rest of the farm was to be divided equally between his five sons in lots of exactly the same shape and size, provided they could discover how to divide the land. The sons have been figuring ever since, but have not yet found out how to divide the farm. Can someone tell them how to do it?

A Puzzle in Figures

1	2	3	4	5
6	7		8	9
10		11		12
13	14		15	16
17	18	19	20	21

Rearrange the above figures so that each of the six columns will add up to 55, either across, down, or from corner to corner.

Enigmatical Rivers

1. What river is a fruit? 2. What river is a fisherman's net? 3. What river is a pet? 4. What river is a girl's name? 5. What river is a boy's name? 6. What river is a reptile? 7. What river is a woman of Bible fame? 8. What river is a female warrior? 9. What river is a bright color? 10. What river is an American anthor?

Answers to Puzzles

Puzzles Printed Last Issue

Farm Implement Puzzle

Farm Implements—1. Saw. 2. Separator. 3. Hoe. 4. Sower. 5. Grinder. 6. Seeder. 7. Mower. 8. Cutter. 9. Harrow. 10. Plow. 11. Baler. 12. Rake. 13. Pump. 14. Weeder. 15. Windmill.

First Letter Change

Shore, horse.

Jumbled Birds

Here are fifteen birds:

1. Swallow. 2. Pelican. 3. Bluebird. 4. Canary. 5. Chickadee. 6. Pigeon. 7. Bobolink. 8. Oriole. 9. Catbird. 10. Cormorant. 11. Albatross. 12 Ostrich. 13. Martin. 14. Magpie. 15. Bittern.

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Boys' Magazine	.85	St. Louis Semi-Weekly Republic	.70
People's Popular Monthly	.65	Toledo Weekly Blade	.60
Woman's World	.70	Kansas City Weekly Star	.60
Ladies' World	1.15	Cincinnati Weekly Enquirer	.75
American Boy	1.15	Chicago Live Stock World (weekly)	.75
Youth's Companion	2.15	Chicago Packer (weekly)	1.00
Modern Priscilla	1.15		
Christian Herald	1.50		

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2. *Name of publication* .....
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My name .....

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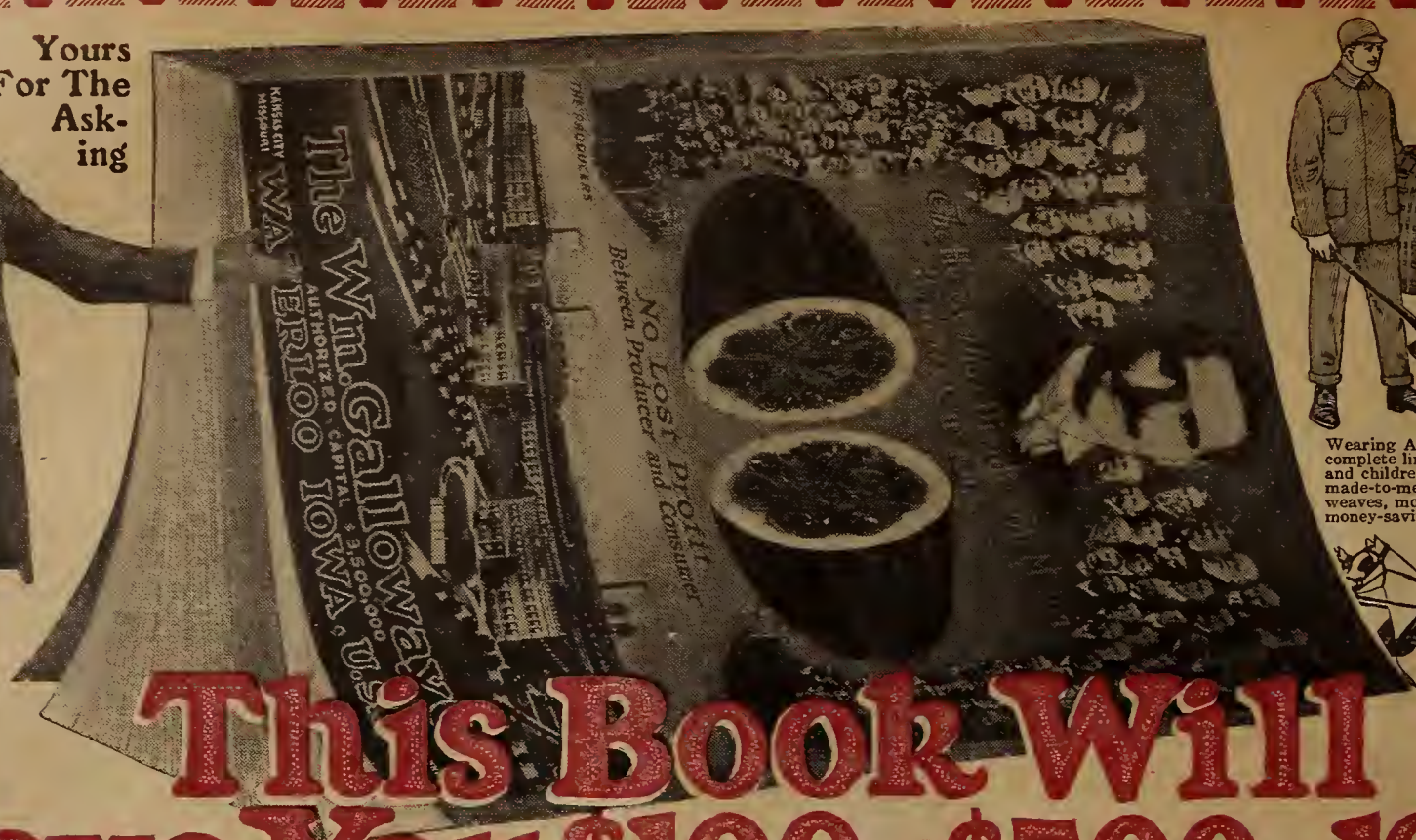
GOOD FOR TEN DAYS ONLY

Jan. 29



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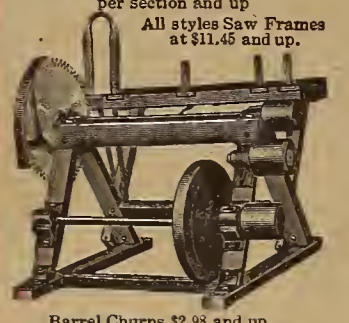
Galloway Flexible Harrows, $5.50 per section and up

All styles Saw Frames at $11.45 and up.



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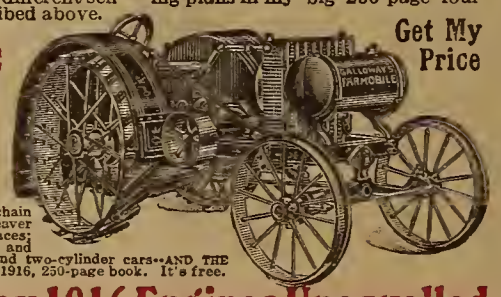

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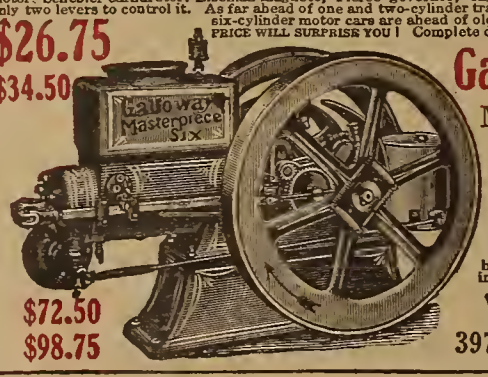

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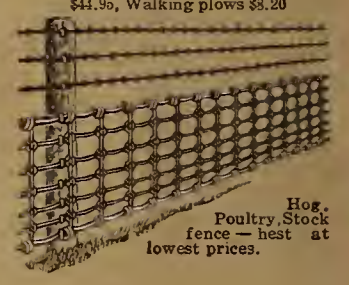

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Our Annual Poultry Number

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Saturday, February 12, 1916

White Leghorn Prize-Winner—See Page 13

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FARM and FIRESIDE

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Vol. XXXIX. No. 10 SATURDAY, FEBRUARY 12, 1916 *Published Bi-Weekly*

Making Money With Poultry

How the State of Ohio Runs a Practical Chicken Farm Profitably

By B. F. W. THORPE

THE essentials of egg production at low cost—breeding, feeding, exercising, and housing—and the essentials of profitable chick-raising—hatching, brooding, feeding, and housing—are well provided for in the poultry plant of the Ohio State Hospital Farm near Dayton. In many respects this poultry plant is a good example of what we can expect to find in the near future on farms where the owners have a leaning toward poultry as a permanent part of their farming operations.

When I recently visited the poultry plant of this state institution I expected to find a practical business equipment without frills, and I was not disappointed. The poultry plant is in charge of L. W. Dawson, a man comparatively young in years but old in hen sense and chicken experience.

When that overwhelming storm and flood disaster swept central and southern Ohio in the spring of 1913, Mr. Dawson was in charge of a successful poultry business on his father's farm near Columbus, Ohio. An inventory after the flood showed a large proportion of their poultry houses in ruins and 300 fine single-combed White Leghorns swept away and destroyed. Instead of rebuilding their plant immediately, Mr. Dawson of our story took the position of poultryman at the State Farm above named.

In a number of important respects the poultry business which Mr. Dawson has now well in hand is a good example of what we can expect to find in the near future on a considerable number of farms where the owners have a leaning toward poultry as a permanent part of their farming operations.

The poultry equipment on this State Farm now consists of the substantial, attractive laying house of the semi-monitor type here pictured. The house is 200 feet long, 6 feet high in front (10 feet at highest point), and 6½ feet at the back. The floor and foundation are of concrete.

Hens Need Plenty of Exercise

THIS building is planned to hold about 1,200 laying Leghorns, or would accommodate 1,000 birds of the larger breeds. Some poultrymen are getting quite satisfactory results housing 1,500 to 1,600 layers in a house of this size if all the birds are given the freedom of the entire building.

During the past summer Mr. Dawson has built some half-dozen brooder houses like those here pictured. Some of these houses are 15 by 15 feet square, and some 15 by 30 feet. They are designed to use with the colony coal-heated brooders which will take care of 300 to 500 chicks five to seven weeks, until the chicks are feathered. This plan of brooding appeals strongly to Mr. Dawson. The better ventilation possible for the chicks, the consequent improvement in vitality, and the great labor decrease in caring for the chicks all serve to put the chick-raising business on a much improved basis.

Whenever possible, Mr. Dawson employs the 15 by 30 brooder houses, placing the brooder-stove outfit in the center of one half of the house. As soon as the chicks learn to go to the brooder they are giveu the run of the whole house, with noticeable improvement in vigor.

It is only fair to say here that there are important differences in the various types of these brooder stoves now on the market. Mr. Dawson finds that the brooders which are so made that the fire can be shaken down without opening the door is a great safeguard against fire. Also the brooder stove should have a firebox large enough to insure a steady and strong burning fire to keep the house sufficiently warm during spells of low temperature.

Here is one of the colony brooder houses that will accommodate 300 chicks until feathered

The draft regulator should be easy of access. One type of brooder stove which Mr. Dawson formerly used required that the operator should get down on his back on the floor under the hover in order to change the regulator. Some costly experience has convinced Mr. Dawson that the curtain to the hover should be of white material, so that belated chicks can distinguish their foster-mother when darkness comes suddenly. Otherwise they may get confused and huddle in a corner until chilled beyond hope of recovery even after they are several weeks old.

What is a good safe litter to use under the hover to reduce risk of fire? This problem is one which Mr. Dawson has experimented with considerably. Fresh, clean soil would be ideal were it not for the clouds of dust raised by the chicks after the dirt gets dry and pulverized. Where clean, washed sand can be procured, this makes a fine bed for the brooding chicks, and the sand can be removed very easily when soiled.

Where the brooder stove is sufficiently tight so as to prevent any fire from dropping out, cut clover or cut alfalfa makes excellent litter, but of course a spark will set the tinder-like material on fire.

An important part of this State Farm poultry plant is the incubator cellar under the laying house. This was originally a cellar for the storage of roots before the days of silos. It is roomy, well ventilated, and particularly adapted for the purpose for which now used. There is an additional advantage in having a poultry house over an incubator cellar: the floor is sure to be dry.

In this cellar is installed a coal-heated incubator of ten units, each unit having a 600-egg capacity. With this outfit, 4,500 chicks were hatched last spring, which of course is but a small percentage of its hatching capacity.

Plans to Hatch 4,600 Chicks

THIS year Mr. Dawson expects to hatch 4,600 chicks to be raised to maturity, in addition to a goodly supply for friers and broilers, and some for custom hatching.

Last spring, hatches of 92 to 95 per cent of the fertile eggs were secured from this stove-heated incubator, but the fertility ran very low, and many eggs had to be tested out, there being too few male birds in the flock. Mr. Dawson finds that one male bird to twelve hens is none too many, even in the case of Leghorns, where large flocks are kept.

The heating of this incubator outfit interested me not a little. Mr. Dawson uses a mixture of equal parts hard coal and coke. By combining the coal and coke a saving of $1.25 for each ton of the mixture used is realized, and the results are equally as good as when the more expensive hard coal is used alone.

The expense of firing this incubator of 6,000-egg capacity is between 8 and 9 cents per day.

For heating the brooder, two parts of hard coal and one part of coke is used, with the same proportional saving for hatching.

After seeing the three essentials in chick-raising well provided for—namely, hatching, housing, and brooding—I wanted the fourth essential, feeding, described. Without skillful feeding, chicks well hatched, well brooded, and well housed always come to grief.

Mr. Dawson has made some enviable chick-raising records by his combination of skill and indefatigable attention to details. Here are his feeding formulas and schedule:

The young chicks, after hatching, have nothing but fresh water, charcoal, and grit until forty-eight hours old. For the third and fourth days boiled eggs and crackers or bread crumbs and plenty of fresh water are given. Then he begins with a dry mash composed of one part rolled oats, two parts wheat bran, one part corn meal, and one part middlings. On the seventh day he adds five per cent beef scrap. On the fourteenth day the beef scrap is omitted from the mash and is kept before the chicks all the time in a hopper. When six weeks old, one part ground oats is added to the mash, but not before unless the hulls are sifted out.

For a scratch feed he begins with a good commercial chick feed after the fourth day. After the first week one part of fine cracked corn and one part of cracked wheat is fed in cut clover or alfalfa litter. After the fifth week the wheat can be fed whole, and corn is cracked coarser. One part of hulled oats is generally added to the scratch feed [CONTINUED ON PAGE 22]

Twelve hundred Leghorn hens use the egg-laying house of the Dayton plant. The egg-laying house is the right wing of this building. It is 200 feet long, and has a concrete floor and foundation

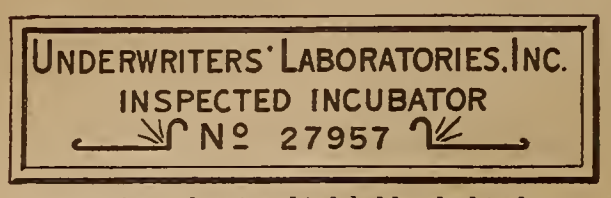
To Get Larger Hatches

Fertile Eggs and Well-Made Incubators Insure Results

By D. S. BURCH

AN INCUBATOR is simply a highly developed piece of machinery, and we must uot thiuk of it, as some do, as a first cousin of a game of chance. A good poultryman can coutrol the quality of his hatching eggs, and also has supervision over all the conditious uuder which incubators work. There is a much less element of so-called luck in hatching chicks in an incubator thau in raising the ordinary farm crop. The expert poultryman smiles up his sleeve wheu he hears such remarks as: "I had a lucky hatch," or "I was luckier with my chicks than our neighbor."

Having good eggs to start with, four things are necessary to insure a vigorous hatch. These are: uniform temperature, proper ventilation, moisture, aud faithful turuing of the eggs. As oue manufacturer of high-class incubators says: "The uovice who buys au inferior incubator uearly always blames himself if he gets a poor hatch. He nearly always finds some excuse for the incubator, and concludes to try again. By the time the secoud hatch is completed his time limit for a free trial of the machine is usually up, and if results have been poor he throws the incubator ou the dump and coucludes he had better go back to hen hatching. On the other hand, there are poultrymen who have used incubators year after year and their hatches are uniformly successful. They are just as sure of getting a large percentage of good, healthy chicks as the dairyman is of skimming a nice, uniform cream when he puts milk into his cream separator. Let's try to get away from the superstitious idea of 'lucky hatches'."



An incubator bearing this label has had its lamp examined, measured, tested, and approved

Way to Judge Incubator Quality

OF COURSE the first step in iucubator success is a good machine, aud I am sorry to say that even the man with cousiderable experience cannot tell a good machine from a poor one by simply looking at it. He must know the make and date of manufacture. You have to buy au incubator a great deal on faith, just as you do a watch or auy other intricate machinery. You have to consider the standing of the manufacturer, and by this I mean the time he has been iu business, whether he exaggerates the merits of his machine and how he treats his customers. Most incubator literature makes one machine appear as good or better than any other; aud unless you have more evidence than simply a catalogue, you may be disappointed. In geueral, the difference between a good machine and a poor machine is this: A first-class incubator will hatch well under a wide rauge of conditious and outside temperatures. The best incubators will maiutain a uniform temperature in the egg chamber, whether they are in a cold or warm room.

In the early spriug, when most incubators are set, weather conditions are likely to be chaugeable, aud this is au important point to bear in mind. Some cheap incubators are sold for actually less thau half the value of the materials which go into better machiues of the same size. Redwood, yellow poplar, cypress, aud white aud yellow pine are the best iucubator woods, and wheu they are well seasoned they are not likely to warp, sweat, and pull apart after the first season or two of use. Workmanship will vary in quality as much as the material, and whereas in a first-class iucubator rivets are set by hydraulic pressure, you will find that in the lower priced machines hammered rivets are commouly used.

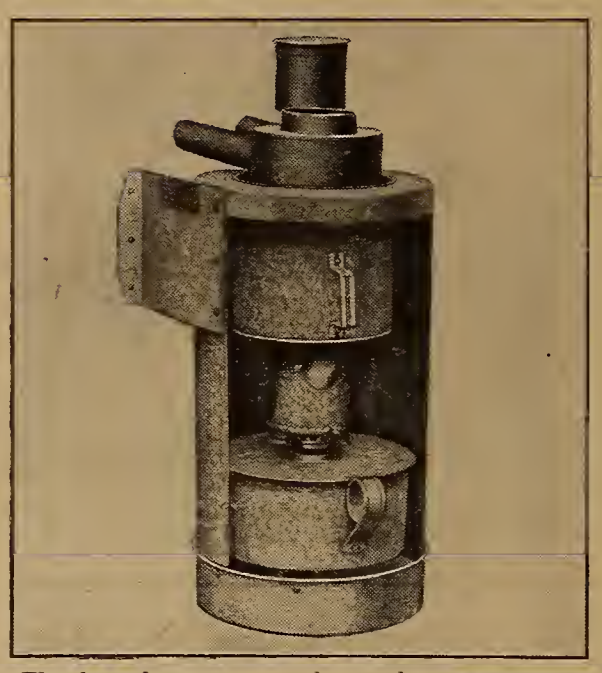
Excellent machines are made in both the hot-water and the hot-air systems, the hot water beiug somewhat the more costly. The chief advautage of a hot-water system for an incubator is the greater likelihood of uniform temperature, and the less danger of the eggs' soon chilling if the lamp should accidentally go out.

Incubator designs are uow pretty well fixed, except for the matter of the chick nursery. One prominent manufacturer says: "For twenty-two years we have beeu building incubators without uurseries, and for about half that time we have built them both ways. Our experience with both plans has proven beyond a doubt that a nursery is a decided disadvautage to any incubator, aud that there are many advantages gained by its eliminatiou.

"The first uurseries were attached to incubators for the purpose of misleading the purchaser to believe that he was securing the combinatiou of an incubator and a brooder. In that way a popular demand was created for a nursery despite the fact tnat they were a positive detrimeut to the welfare of the hatching chicks. The greatest disadvantage of a nursery lies in the fact that it is impossible to keep the uursery and the egg trays at the same temperature, aud it is not uuusual to find a difference of twenty degrees between the egg trays aud nursery in some incubators: it is seldom less than ten degrees. By subjecting the newly hatched chicks to a sudden chauge in temperature, both bowel and lung trouble frequently result, thereby reducing the vitality of the chicks and making it impossible for them to survive.

"The use of the nursery will many times explain why an incubator will frequently produce a good hatch only to have the chicks begin to die a few days after they are placed in the brooder. If the egg chamber is kept absolutely dark during the eutire hatch, the chicks will scarcely move from the place they are hatched. This plau serves to keep the chicks quiet at a time when they ueed their strength, and furthermore it elimiuates that objectionable feature of crowding to the front of the egg chamber in au effort to reach the light. The old hen keeps them in the dark, and you cannot beat Nature's way. All mammoth incubators used by the big hatcheries are now built without nurseries."

Another matter which is better understood than formerly is the question of turning eggs. The purpose of turuiug eggs is merely to relieve the tension on the fibers which hold the yolk in place. If you turn an egg a quarter of au inch from its former position, that is euough to rest the fibers. Turu eggs twice a day.



The best lamps are made so they cannot explode, no matter what happens to the incubator

Moisture control is another matter worthy of explanation. An egg has plenty of moisture to begin with; in fact, it has too much to allow a chick to hatch. Au egg must lose about one sixth of its moisture during the process of incubation. Therefore, attempting to supply artificial moisture is in most cases unuecessary, and suitable ventilators uow seem to give best results. Iu regious of high altitudes and in very hot weather there may be some exceptious to this rule.

Of the many improvemeuts in incubator design the most noteworthy is the iuterest taken in incubators by the Underwriters' Labor[illegible]d iu Chicago.

A few years ago the Nat[illegible]e Fire Uuderwriters appointed a commi[illegible]rt mechauical engineers to prepare specific[illegible]overing the construction of what they couside[illegible] a fire-proof incubator. The underwriters' laboratory, where most of the work of this board is conducted, is a large building devoted to the testing of appliauces having to do with fire. Such appliances include stoves, lamps, engines, fire extinguishers, prepared roofing, and all sorts of building materials that are likely to influence insurance rates.

Articles which cau pass the iuspection of the uuderwriters' laboratory take the lowest iusurance rates of articles in that class. The inspection of incubators by this board is uow in progress, and up to last July, seven oil-heated incubators had passed the requirements. In scarcely a case did any incubator pass the test till it had beeu recoustructed along the liues specified by the board.

"I took our incubator up to Chicago," one manufacturer said, "to have it officially tested. The first thing one of the inspectors did was to push the lighted lamp over with his foot. I argued that no one was going to deliberately kick the lamp over, but argument had uo effect. The theory of the Natioual Board of Underwriters is that you uever know what is going to happeu, aud the lamp must be fixed so it cannot explode, no matter what happens to the incubator."

But even when the design is finally approved, this board, which is made up of representatives of various insurance compauies, takes nothing for granted. Their inspector must personally measure and test every incubator lamp and bracket, and to each one approved he attaches an inspection tag bearing a serial uumber, so that auy complaint later on may be traced.

The incubator manufacturer is charged for the tag, and the price is high euough to cover the service of the inspector. This expense makes the machine more costly, and the purchaser of a machine bearing the label of the underwriters' laboratories eventually has to pay for inspection. But he has the satisfaction of knowing that it is an absolutely safe incubator, and his insurauce rate is about 25 cents a hundred less thau it would otherwise be. Oue manufacturer makes two styles of incubators, one of which is approved by the Board of Underwriters, and the other is not. The difference in price is from $4 to $5, depending on the size of the machine.

This is a modern coal-heated brooder used for raising 500 to 1000 chicks at a time on a floor space of 100 to 200 square feet. The room must be well lighted and the floor dry

Money Needed

How Chickens Helped Us Get It

By EUNICE GUTHRIE

WE HAD bought our farm, and gone in debt rather heavily. There were pastures to fence, posts to buy, wells to dig, a baru to build, a piece of farm machiuery now aud then—aud all done on credit.

As soon as a load of hogs was sold there were a dozen places yawuing for mouey. Hogs were our chief mouey source, though we had four good brood mares and raised colts every year. We also kept ten milch cows and some calves. Oh, we seemed to have pleuty around us, and appeared very prosperous, but uevertheless we ueeded money—money for our liviug and some cash ou hand which we seemed never to have. So I began to do some pretty tall thinking.

We had always raised chickens, but in a rather indifferent mauner, and uever realized much from them. I decided after thinking, and studying some poultry literature, to go into it in a busiuesslike way. I wanted au iucubator, but it would have meant another debt. So I thought I might as well begin there, and do without the iucubator until I had money out of my business to buy one.

I had 50 Barred Rock pullets and 25 old heus. These wauted to sit in the latter part of March. I tried to set ten hens at a time and couuted on 100 chicks. My husband made some good roomy coops with a ruuway of chickeu netting coveriug sides and top. That summer I raised 300 chicks, about half being pullets. I didn't realize much that year beyond eggs to set and feed for the chicks.

I had persuaded my husband to let me have the money for the milk, which was sold at a creamery and averaged about $45 a month for nine months. I found by having this cash I could take $25 and make it go a long way toward supplying all the household needs, leaving the other $20 to be used for necessities about the farm.

The next spring I started in with over 200 hens. I sold from 50 to 60 dozeu eggs a week. I averaged from $4 to $5 per week for the whole year. That was extra besides the eggs we used, and the young roosters we ate. We sold the surplus roosters, and they more than bought feed for the entire flock of hens.

I again raised 200 chicks. I aim now to keep from 200 to 250 young hens. That is all I can handle, but they lift me from my extreme ueed of money. My husband continues to give me $15 every mouth from the milk money. That is cash. The eggs I sell at the grocery store.

The end of the year finds us with uo household expenses to be met, and I have a little surplus in the bank, in my owu name, out of my cash saved from month to month. We ueed for nothing, and I am planning for a few little luxuries for my home in the near future.

E W

Changing Turkey Nature

When the Poults Live in Houses Instead of Forests

By FRANK W. ORR

Until the roving instinct is subdued and complete domestication takes the place of restlessness that now prevents thrift and vigor for many birds in confinement, houses with large yards are used

EVER since his ancestors gobbled and strntted in the forests, Br'er Tnrkey has held to his wild tastes and desires. Tom's better half objects to a comfortable nest in a poultry house, and steals her brooding place where she must match wits with fox, raccoon, and even more dangerous enemies.

The thickening of population in the East has steadily pushed the turkey indnstry westward nntil now the tnrkey snpply for the nation is shipped by scores of carloads annually from the plains and foothill ranches and Rocky Mountain States. A few favored localities in Kentncky, Tennessee, and several other Southern and Central States still raise tnrkeys in profitable commercial quantities. Bnt most former Eastern turkey enthnsiasts are merely marking time, waiting until "black head" shall be conqnered.

A few zealous tnrkey breeders are now working to make over the habits and tendencies of the turkey. They contend that there is no good reason why turkey natnre cannot be changed until the roving instinct is subdned and complete domestication takes the place of the restlessness that now prevents thrift and vigor in confinement.

One of these champions of complete domestication is experimenting in California. His plan is to raise all his stock in roomy, airy honses with yards of generous size that can be rotated with growing crops. His breeders are selected from the birds that remain vigorous and most contented in confinement. After raising some half-dozen generations without range, he reports some decrease in tendency to liver trouble, and encouraging indications of developing a strain of turkeys that will thrive in confinement.

A New England woman who is succeeding with the same plan of using yards of comparatively limited area now keeps more than 200 breeders, and is demonstrating that wide range is not necessary if the poults are never overfed and are always supplied with food of jnst the same character they gather for themselves when on range.

When ranging, the poult picks its feed gradnally and never has an overfilled crop. Constant overfeeding soon gets the digestive organs out of order. The result is a short and ailing life for the poult.

Feeds Poults Lots of Sour Milk

Two years ago FARM AND FIRESIDE published the resnlt of experiments that were carried ont by Dr. Philip Hadley of the Rhode Island Experiment Station. The basic factors of success indicated by his experiments are sour milk and a limited ration while the ponlts are yonng. His experiments have been carried out in yards and on limited range.

By means of his system Dr. Hadley has been able to relnce the mortality to 40 to 60 per cent of the poults hatched. This death rate includes all losses from other causes besides black-head disease.

In brief, the plan he follows of forestalling the black-head disease and other digestive tronbles is liberal feeding of sour milk, beginning at an early age. In connection with the constant feeding of sour milk his greatest success has come from limiting the grain and mash feeding to a minimum.

A maxim commonly followed by turkey raisers is, "Feed the birds only as much as they will clean up at one time." Dr. Hadley has found that a better maxim is, "Find out how mnch the ponlts will clean up at one time, and then feed abont one half that amonnt."

Young turkeys in confinement will eat several times as mnch as they reqnire for best growth. The unnsed surplus clogs np the intestinal canal and develops just the conditions that favor liver disease and finally the so-called black-head disease, which in reality is the final stages of a diseased liver.

A general outline of Dr. Hadley's plan of feeding young turkeys follows:

For the first forty-eight hours after hatching no food is given to the yonng ponlts. At the beginning of the third day chopped eggs, inclnding shell, are given at the rate of four grams (28 grams eqnal one ounce) per bird per day. This amonnt is gradnally increased to the end of the first week, then decreased to the end of the second week, when egg-feeding is discontinued. Other feeds are added gradnally. For instance, on the fonrth day green food (chickweed, lettnce, Swiss chard, sprouted oats, oat tops, etc.) is given, and continued in ever-increasing amonnts; on the fifth day rolled oats are added, to be discontinued at the end of the third week. Beginning on the ninth day a mash is given, consisting of the following: Cornmeal, 6 parts; wheat bran, 4 parts; middlings, 2 parts; granulated milk, 2 parts; linseed meal, 1 part.

Sour-milk feeding shonld start at least by the tenth day, at the rate of abont 10 grams (about one-third onnce) per bird, and should be gradually increased as the birds become older and develop a taste for it. After the sixteenth week the young turkeys may be given as mnch sour milk as they will consume.

The mixed-grain ration also begins with the third week, and continues until the eleventh week, when it is replaced by equal parts of corn and wheat, beginning at the rate of three to fonr ounces a bird a week.

Hens versus Cows

No Stock Pays Better Than Poultry

By AMOS L. GRIDLEY

THE hen has not yet come into her own. Why is it? Over and over it has been proved that no farm stock—cattle, horses, hogs, or sheep—can tnrn grain and forage into a finished commercial product so economically and profitably as can the hnmble hen. Nevertheless, the average masculine verdict is, "Hang the hen! Too fnssy work for a grown man, and the income too small for the care and labor required."

Let us analyze the chicken business a little. On farms where two or three cows are kept for home use we don't hear much abont the expected profits from the dairy except in villages. It is recognized that the profits mnst come from adding to the herd and placing the dairy on a bnsiness basis so that economical production can be secured. Why not apply this argument to the farm poultry flock?

The score or two of layers constitnting the average farm poultry outfit is on a par with the one- or two-cow dairy—too few producers from which to expect a profitable income except as a means of converting waste feed into table snpplies.

But the would-be one-man dairyman expands his operations by adding eight or ten good cows to the ones kept for home use, and hopes for an additional one-thousand-dollar gross income. He finds his labor increased, but not in proportion to his income received.

So too with the hen. Increase the layers to 200 in place of 20 or 30, improve the equipment, systematize the labor, and the income increases even faster in proportion to the capital invested and labor required than is the case with the enlargement of the dairy.

In so far as eqnipment is concerned the advantage is entirely with the hen. An investment of $75 in addition to some nnskilled farm labor will furnish sufficient honsing to accommodate a flock of 200 layers. If we make the snm $150, incnbator and modern stove brooders can be inclnded so that several hundred chicks can be reared with no more work than a small flock takes.

On the other hand, if a two- or three-cow dairy is to be enlarged to a dozen cows, the cost of sufficient equipment will easily amonnt to ten times what would be required for a 200-hen laying outfit. From the 200 good layers $200 net profit can be expected as a conservative figure. From the 12 good cows, $300 to $400 net profit is a liberal estimate after reckoning interest and depreciation on the greater investment.

The daily-labor item for the dozen cows cannot be put much under five honrs for one person throughout the year, including feeding, stable work, milking, care of dairy utensils, harvesting, and storing feed, etc., even if the milk is separated and the cream collected by a carrier.

The care of 200 layers and the growing of the young stock to replace the laying stock need not average over three honrs daily.

Keeps Nine Cows and 350 Hens

I visited a friend last snmmer who has kept both hens and cows for years. His dairy averages abont nine cows and his hens from 300 to 350 layers, the latter all honsed in one bnilding without partitions, except to protect the roosts from drafts.

Except dnring the first two weeks when the chicks are small, the poultry receive considerably less than half the time and labor given to his cows.

His hens last year averaged 12 dozen eggs per hen, and his eggs, sent to New York City market, netted him a little over 25 cents per dozen for the year. His net income per hen, reckoning all the feed supply at market prices, was jnst under $1.50 per layer.

His net income from the cows, reckoned on the same feed-cost basis, was no greater than from his hens. His cost equipment for his dairy bnsiness is at least ten times that for his hen bnsiness.

The question arises, Why shonld not this farmer close out his dairy business and double his laying ontfit? He has considered this move, but has decided that the dairy beneficially supplements his hen bnsiness. Cows, heifers, horses, and machinery eqnipment required for dairying enables him to keep his 80-acre farm more prodnctive and in better condition to raise the oats, wheat, and buckwheat needed for his hens. The straw for scratch litter, cabbages, and other succnlent poultry feed for winter use are likewise important. Last, but not least, the skim milk fed to his hens and chicks saves an annual bill of $100 that would otherwise have to be paid ont for animal protein feed.

This dairyman-ponltryman has found it possible to rednce the labor item of caring for a flock of layers and growing chicks practically one half by systematizing the work and by the use of labor-saving devices. He feeds dry mash in hoppers, storing the grain where needed in large qnantities. He pipes the water snpply direct from the stable pump into drinking containers instead of carrying the water, nses litter carriers to move the scratch material in, and the soiled litter and manure out of the poultry honse.

The entire money income from this combined dairy and poultry farm nets a little less than $1,000 a year, bnt the income is safe and snre, the barn and farm bnildings are being improved, and the owner's family are comfortable with modern conveniences in the home and on the farm.

It goes without saying that a "tender-foot" cannot hope to plunge into egg-farming and make good with a flock ennmerated by hundreds, at the start. The hen man mnst creep before he can walk. The first year's operations should be small.

The first indispensable requisite for snccess in commercial poultry-keeping is to realize the necessity of using no parent stock that is not high in vigor. Next he mnst understand that good sanitary conditions are jnst as important as vigorous stock, and without dry, well-ventilated ponltry honses vigor cannot be retained.

When the beginner has made these fnndamental points his own, he can confidently expect to develop a commercial flock that will make him a good living—if he likes to work with chickens.

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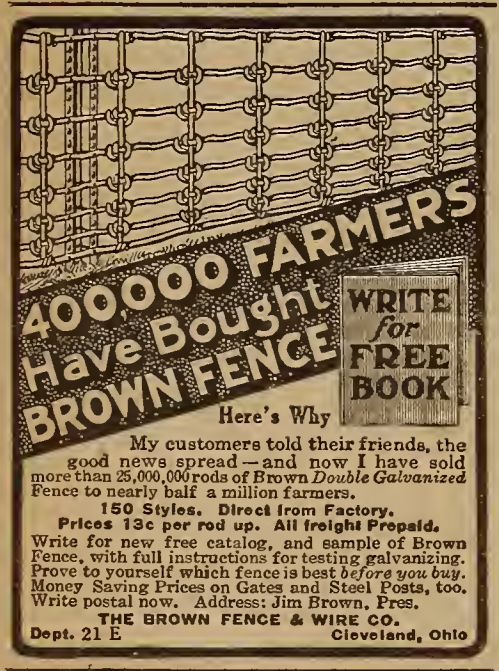

The Editor's Letter

Price of Cockerel Came Back Many Times

WHAT job can equal in interest that of editor of a farm paper of general circulation? I can't believe there is one. This was my belief considerably over a dozen years ago, and the same idea has been itensified with each succeeding year. And there's a reason. Farm folk are thinkers. The character of their work indoors and out conduces to continued logical consideration of life's basic interests.

Unquestionably, no group of the world's workers has forged ahead intellectually as have farm dwellers in the last generatiou. The fruits of invention and discovery have furuished just the stimulus that was formerly lacking when each farm supplied more nearly the wants of its workers.

An editor's desk is a veritable storm center toward which surges practically every angle of thought imaginable. No sooner does an article or editorial touching some vital phase of life's activities appear, than a tide of comment, criticism, or substantiation sets iu.

Without such expression of opinion a farm-paper editor would fail to get the breadth of view so essential to his work. No matter how much he may mix with his fellow workers, he is sure to get by letter that which would not be forthcomiug face to face.

Just note how this diversity of interests works out. Suppose the matter up for attentiou is co-operative buying and selling. Perhaps a score of letters of experience and comment may reach my desk from a dozen or more States. California by reason of her more urgent ueeds has traveled the co-operative road much farther than the coru-belt States. The thinner, rougher land of the Eastern States, where farmers' organizations are stronger, needs co-operative buying as badly as the Pacific Coast needs team work in selling. The truck and fruit specialists of the South have urgent ueed of every co-operative aid to get their products profitably marketed, and the costly fertilizers and equipment required to carry ou their specialized farm operations economically.

It goes without saying that the views coming from these widely separated sections will conflict. Yet there is often harmony ou basic essentials which help the editor to point the way to struggling community or individual.

More Milk and Eggs by Breeding

The mater of co-operation is only one of scores. Comment or inquiry may deal with some phase of stock-breeding, plant improvement, etc. For example, here is a letter from a corn-belt State:

"I write to bring to your attention a matter a neighbor and I have been discussing. He is interested in the improvement of utility dairy stock, and is developing some interest in poultry. I am giving special attention to building up a better utility strain of chickeus. We don't quite agree whether it is possible to make the same improvement in egg production that can be secured by proper breeding methods with dairy animals. We do agree that the same principles should hold true with both classes of stock, but disagree on the comparative value of improved dairy stock and heavy-producing poultry stock.

"What we want is some plan or system of reckouing with which to work in figuring out what can reasonably be expected from an attempt to improve farm flocks of poultry for utility purposes."

Such an inquiry would hardly have come to FARM AND FIRESIDE a generation ago. To-day it brings us directly and fairly face to face with a poultry proposition that is incubating under the hats of thousands of farmers and others who are no longer content to consider a hen a hen no matter what her ancestry.

This question is in no sense an enticing one to tackle in an advisory way. Dairymen of experience are practically a unit in believing the possibility of increasing milk and butter production by proper breeding methods. But the chicken-improvement part of this inquiry is not so generally accepted.

All that I can hope to do in answer to such a letter is to suggest some basis on which to reckon probable increase of revenue that may be expected from scientific breeding for increasiug production.

In attemptiug an analysis I believe it fairest to compare stock of reasonably medium price in both cases. Dairy cattle valued at and selling for five to ten thousand dollars and upwards for exceptional individuals are out of reach of the ordinary dairyman. So, too, is the hen that makes a clean sweep at an egg-laying contest, and in consequence sells for several hundred dollars.

For a basis of computation here I shall place the valuation of pure-bred dairy cattle at $200 per head and $10 per bird for pedigreed utility breeding stock—hens having an authentic record of 200 eggs and males with an equally productive ancestry.

Granting the $200 cow will produce a pound a day for six years, her increase from butter and skim milk may be counted at $625. Estimating six calves at $25 each at birth, and allowing one-half value to each pure-bred parent, a total of $700 may be considered the direct gross returns for the $200 invested in a pnre-bred dairy cow of good pedigree and performance.

Anything Wrong with This?

Similarly I shall allow $200 for the pnrchase of a pedigreed dairy-bred bull of equally desirable breeding. Mated with a suitable herd of twelve grade and four pure-bred cows, I will call a fair estimate 36 grade and 12 pure-bred calves during a period of four years. Allowing 18 grade heifer calves to be worth at birth $5 additional as the contribution of their sire, and $1 each for the grade male calves at birth, a total of $108 may be reckoned as the credit item from the grade part of the herd.

For the 12 pure-bred calves I shall allow $300 at birth, and credit one half to their sire. This basis of reckoning gives $258 as the total direct return for the bull investment.

Now turn to the chicken phase of this proposition: the $10 year-old, pedigreed, 200-egg hen may be counted on to lay 170 eggs in her second year, seven dozen of which, for commercial sale, will be worth $2, and the remainder incubated should furnish a dozen chicks worth, when hatched, $6 additional if the hen is properly mated. For her third year I shall allow $5 income, making $13 as her direct return for $10 invested.

Next I shall grant that the $10 cockerel has been properly mated with four pure-bred hens his equal in breeding and eight hens of common stock. Dnring the hatching season of two months I shall estimate a 50 per cent lay—360 eggs—and a 50 per cent hatch—180 chicks. The 60 pure-bred chicks I shall price at $15 when hatched, and the 120 grades at $18, and credit one half value of the pure-breds to the male parent and one half to the female parents, making a direct income of $16.50 the first year. The second year I shall credit him with $10, or $26.50 for his estimated productive life.

Recapitulating, $200 invested in a pure-bred dairy cow may furnish a direct return of $700 in six years; in a dairy-bred bull, $258 in four years; from $10 invested in a 200-egg hen a return of $13 in two years; a pedigreed cockerel, $26.50 in the same period.

Do I hear a voice say, "It's dead easy to shoot that schedule of production target full of holes"? That's what it was set up for—to shoot at.

Take the perigreed cow deal for example. She may go wrong in two years or less. Again she may give good returns for eight or ten years instead of six years as scheduled. Instead of selling the calves at birth the owner may surround himself with several thousaud dollars' worth of her pure-bred progeny before the old cow is turned down.

Similarly the pure-bred sire may go to pieces a year or two after purchase. On the other hand, a skillful breeder may keep him five or six years and, by careful development of indirect line-breeding, stock his farm with "blue bloods" before the $200 sire goes to the shambles.

By raising instead of selling the progeny of the pedigreed hen, a dozeu pullets should be in full lay six months from the shell, and when the old hen ronnds out her second laying year for her new owner, a flock of 100 pure-bred high-producing daughters and granddanghters may fill his poultry house. As an adverse picture, his $10 hen may go off by the weasel route before laying a dozen eggs.

As a sequel to my estimate for the $10 cockerel, let me give an actual case. Last winter I sold a customer a well-bred, egg-strain cockerel for $10. Not long ago he reported as follows:

"I mated the cockerel with a pen of pure-bred pullets. From the mating I have close to 90 promising pullets most of which are now making an average of a 50 per cent lay in December. A pen of the pullets were entered in an egg-laying contest, and I stand close to the head of the procession among 100 pens. The $10 paid for the cockerel is not worrying me a bit."

The Editor

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oultry Side Lines

Rearing Jumbo Squabs

How an Eastern Farmer Adds Dollars to His Income

By ALBERT LEVIN ROAT

The squab factory is a system of pens under one roof, with an outside cage or exercise pen. The building is set on three-foot piers

MY SQUAB factory was started in a small way. I tried out different breeds of birds, styles of pens, and rations to learn what kind would return a profit on the investment and the labor. The Carneaux, Mondain, and White King breeds of pigeons gave me the best results. They will produce the real Jumbo squab. They are good feeders and caretakers of their young.

Certainly, success can be had with other types. The Homer gives results, but its squabs are not large enough for my trade. Many other types I used didn't prove as profitable for me as the ones I selected. I raise most of my stock birds, and purchase only a few new birds when necessary.

I select breeders with the best squab-producing records. In March, April, and May I band the youngsters I intend to keep for future breeders, and let the parent birds feed them as long as they will, destroying any eggs laid during this raising process. Also each year I sell a few birds and buy new stock. I am careful not to inbreed directly. My desire is to increase the size of the squabs and the output from each pair of pigeons.

My squab factory is a system of pens all under one roof. The building is oblong, set three feet off the ground on concrete pillars, facing the south. I find a house set off the ground is ratproof and the floors are dry.

The individual pens are 20 feet square and 10 feet high. An outside fly of wire netting, 20x60 feet, gives the birds of each pen an exercise cage. This cage is built to the ground. An entryway extends the entire length of the building. Windows are set in the north wall of the building two feet apart, which give light into the pens and ventilation. A wire door opens from the entry into each pen. Above the windows, along the north wall of the entry, are built mating boxes. It makes an ideal place for the nests because they do not take additional room and are out of the way.

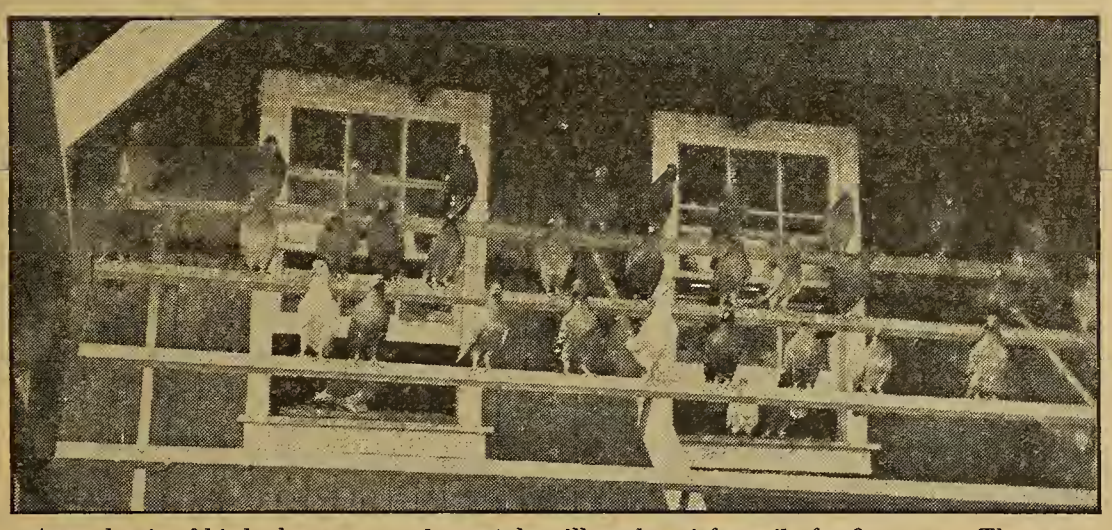
In each individual breeding box the birds hatch out their young and condition them for market. And to do that successfully the parent birds must work under perfect conditions. A necessary thing to remember is to keep the birds in each pen mated. If one bird is not mated it will upset the perfect working harmony of the entire pen, and loss is sure to follow. Watch the birds, and remove any birds that are not mated properly, and never return them again after mating to that same pen.

The working part of the factory is kept comparatively dark because pigeons do better this way, and the inside pen is a working place, not a fighting or play room. The floor of the inside room is covered four inches with gravel or rotten rock. A water fountain is set near the door. In one corner is built a latticed rack in which to store tobacco stems. I prefer tobacco stems to anything else for nesting material because it gives the birds something to do, building before the eggs are laid, and tobacco odor is insurance against vermin. The nest boxes are also built around the side walls in tiers from the floor to within a few feet of the ceiling. The top of the nesting boxes is boarded to make a promenade walk for the birds when mated.

To fit the floor of each nest box there is a flat board with a strip nailed across the front, four inches high. A pull-tack is put into the front to act as a knob when removing the board for convenient cleaning. The nests are dusted with a good vermin powder when eggs are first laid, and again just before the young birds are hatched. Lice annoy pigeons and must be controlled, or the profits will be lost.

The outside cage is the recreation and exercise pen. The roof of the building comes out four feet over this cage to protect the inside pens from strong light and, further, to act as a protection to the birds when roosting outside during the hot summer months and in rainy weather.

Metal bath tubs are kept on the floor of the outside cage. The birds are furnished a bath every day in summer and in winter when the weather permits. The water is never left in the bath tubs longer than two hours, because the water becomes foul and unfit for either the old birds or squabs to drink. Emptying the water from the bathing pans [CONTINUED ON PAGE 25]



A good pair of birds that are mated properly will work satisfactorily for five years. The eggs hatch in seventeen days, and the squabs are ready to market in three to four weeks

"Stuffing" Geese

Noodles Double Weight of Birds

By FRED L. HOLMES

WHEN geese weigh 15 to 18 pounds they are sold ordinarily at from 15 to 18 cents a pound, live weight, to supply the holiday trade. Now there has developed in Wisconsin and other geese-raising States a method of fattening geese by which a 15-pound goose can be made to weigh 30 pounds within three weeks. The larger birds sell at a much higher price. The price to be paid for "stuffed" geese is announced usually by the dealers months in advance. A 30-pound goose, dressed, may sell for as much as $10.

When the geese are stuffed by the artificial feeding process their livers sometimes enlarge to nearly four pounds for a single bird. These are sold at upwards of one dollar a pound, and are used to make the world-famous delicacy *pâté-de-foie gras*, or Strasburg pie. The lard from these geese is sometimes used as butter shortening, or as a part of certain medicines at high prices. The skin is cut into little squares and toasted, making a much-sought delicacy known as Jewish crackers. Most of these stuffed birds are shipped to New York, where they are sold piecemeal—lard, livers, crackers, etc.

To earn these profits requires the introduction of a novel method of feeding and caring for the geese. Three weeks in advance of the time fixed for sale, geese weighing more than 15 pounds each are put into small pens—ten or twelve in a compartment about 6x10 feet in size. Geese under that weight are sent to the regular holiday market.

For about three weeks these geese are stuffed with noodles. A couple of noodles compose the first meal. This is increased gradually. Care is taken not to overfeed the birds so as to produce "sour stomach." At first six or seven hours are allowed to elapse between meals, but during the last week or more they are fed every three hours, day and night.

The formula used by the Watertown geese farmers in making noodles is: One part low-grade flour, two parts bakers' grade flour, and three parts corn meal from new white corn.

This gives a noodle of the right slipperiness and firmness. This stiff mixture is pressed through a sausage stuffer and cut off in three-inch lengths.

Warm noodles are forced down the geese's throats. Swallowing is assisted by gently rubbing the fingers along the goose's neck while it gulps. The fingers of the feeder are protected by gloves to avoid the sharp cuts from the saw-like teeth along the side of the goose's bill.

The fattening of geese will not be successful if the birds have not been well tamed in advance. Bruises of the skin prevent their sale at the high prices. Plenty of drinking water is kept in the pens. Some of the birds become too fat to walk. These are often killed, if the weather is cold, and held until market day.

Ordinarily goose farmers do not fatten more than 50 to 100 geese in one fall. But even a smaller number, properly finished, means a nice side-line addition to the farm income.

The feeder helps a goose to swallow noodles by rubbing his fingers along its neck while it gulps

Dressed "stuffed" geese sometimes sell for $10 apiece. The price a pound is announced by the dealers months in advance. The geese are fattened in three weeks. When dressed they look like large rolls of yellow butter

FARM and FIRESIDE
THE NATIONAL FARM PAPER
Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price

One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

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February 12, 1916

Barleycorn's Christmas

THE wreck that rum causes is best recognized when thought of in connection with the spirit of the Christmas season. One national temperance society made it a point this year to study holiday boozing and its results. Newspapers from all parts of the country, and letters from representatives stationed in the various States, brought in the news.

From partial reports it has been learned that 126 are dead, including seven children, and 155 injured as a result of holiday festivities of the wrong sort. Seventy-seven of the dead were murdered, 18 committed suicide on account of despondency caused by the drink habit, and 31 were victims of accidents caused by drunkenness or alcoholism. Six hundred and nine human tragedies, deaths, and crimes have been reported.

That is the way John Barleycorn celebrated the Christmas season.

Stockyard Abuses

SOME changes are due in the methods of operating the principal stockyards of the country. The Chicago yards, especially, have been the object of bitter criticism. You will perhaps remember that last November the federal Office of Markets held a hearing at Chicago to give prominent stockmen an opportunity to be heard.

At that time a mass of testimony was taken, and here are the principal abuses brought to the surface: Four to five individuals own or control not only the packing houses which are under their names, but also the stockyard companies, cattle loan companies, stockyard banks, rendering works, and similar institutions found in the stockyards.

A commission firm established at the stockyards must secure its offices, pens, feed, and supplies from the stockyards company, and is also dependent on it for many other services. A firm in such a position must be on good terms with the stockyards company, which is virtually the packer, and cannot represent its farmer client as efficiently as if independent. Mondays and Wednesdays are the two most important market days at Chicago. At Kansas City, Tuesday is also important. By emphasizing these days, buyers have been able to concentrate receipts on these days, and this has a tendency to lower prices. A Denver feeder who shipped 650 cattle for a Tuesday market at Chicago could get only one buyer to bid on them, whereas on Mondays there is always competition.

On the big days the buyers of the packing houses arrive at the yards as late as eleven o'clock in the morning. This is a cause of delayed weighing as well as shrinkage and deterioration in appearance.

The American National Live Stock Association, a stockmen's organization, has through its committee on stockyards added more abuses to those already charged, among their chief complaints being delays in switching and unloading, packer influence over prices, and excessive prices for feed furnished at the yards.

The association simply asks for a method of stockyard management which will enable the buyer and seller to meet on equal terms. Those who have followed the situation are well aware that stockyard receipts have declined in the past ten years.

The time seems ripe for a general overhauling of live-stock marketing methods.

Reason for Good Roads

THE city council of Davenport, Iowa, has, after investigating the heavy automobile truck for the fire department, invested in a "mosquito fleet." This is a popular term for light-weight, speedy fire-fighting motor cars.

Whereas the largest motor fire trucks cost about $3,500, a "mosquito fleet" car costs about $750, including all equipment except ladders, lanterns, and fire extinguishers. A mosquito fleet is said to be capable of making long, fast runs and to solve the problem of adequate fire protection for small towns and villages.

With good roads, one of these fire-fighting cars should give a good account of itself even in country districts.

Unmarketable Poultry

THE small-town market for mature hens of the lighter breeds is limited, and is sometimes closed entirely. A New Hampshire poultryman whose favorite fowls were White Leghorns undertook to dispose of a few dozen surplus hens, and found to his astonishment that local poultry buyers would not buy them at any price, though the market for fowls of four pounds and over was good.

A poultry buyer in an Ohio city of 50,000 refuses to buy mature birds of the lighter breeds, and also discriminates against half-grown Black Langshans. His objections are based on the grounds that the light birds require as long to pick and dress as the larger breeds but bring so much less that it doesn't pay him to handle them.

The lighter breeds are by no means inferior in the quality of flesh, but before raising more than are required for the home table the wise poultryman will do well to size up his markets rather carefully to see if such conditions prevail in his locality. The discrimination ceases when fowls weigh four pounds or over.

Work with the Weather

AN EXPERT in the Department of Agriculture has calculated every day during the crop-growing season to be worth about fifty million dollars to the farmers of the country.

He must have got his fifty million by dividing the amount of agricultural wealth by the number of days taken to produce it. Farm work is hard to standardize, so hard, in fact, that most attempts to regulate hours of employment on farms have failed. Getting the work done is still largely a matter of long hours and hard manual labor. Certain work must be done at certain times, and every day you lag behind means a greater and greater loss.

The writer has a neighbor who works his farm on the following rule: "On bright days, do only outside work; and on bad days, do only inside work." He keeps his work well up to date, and also takes good care of his health in that way.

A Duck Paradise

DID you ever see ducks in white eddying, whirling shoals—acres of them waddling, swimming, diving, flapping, and a-quacking from ten thousand throats in unison? If not, visit the east shore of Long Island some fine June day.

The writer went duck sightseeing on a number of these farms when the operations were at high tide. Ducks were in every stage of development, from the baby ducklings just breaking shells to the well-developed "green roaster" stage. Many of the latter were receiving the penalty of high living by going through the process of being bled, plucked, cooled, and crated in preparation for "dollar a portion" and upward to tickle the palates of the wealthy.

All of these duck farms are conducted very much on the same wholesale system. The hatching, housing, feeding, fattening, killing, dressing, cooling, and marketing have been reduced to a scientific basis, making possible a small but sure profit on each duck raised up to market age. Where 40,000 to 50,000 ducks are raised annually on one of these duck farms to the broiler and roaster stage, and marketed, or even a much smaller number, a net profit of a dime or two per duck insures a nice income for the duck farmer.

Two acres of ducks, worth $1,000 an acre

The White Pekin variety is the favorite for duck-farming operations. This variety will make a weight of about five pounds when ten weeks old.

The inlet streams and lagoons along the east shore of Long Island furnish the required water supply which makes possible such multitudes of healthy and contented ducks.

Our Letter Box

Young Farmer Gives Advice

EDITOR OF FARM AND FIRESIDE: As I am a reader of your paper, and read your letter, "A Reply to a Farm Boy Who Has No Farm," I thought I would write you a letter.

I am a young farmer myself, twenty-two years old, and I do not see how any farmer can pay $8 an acre rent in Iowa or anywhere else and have a bank account at the end of the year. I lived in Iowa before we came to Montana.

Now, that boy says his father will let him have that place for $4,450 less than anyone else. He had better let him sell the place and his father give him that much money, and go somewhere and get cheap land.

Now, that $4,450 would buy him a nice home in Montana close to town, or he could go back from town and homestead. That is better, to my notion, than going into debt and paying interest on high-priced land. JOHN H. HARDEN.

Has Good Husband

DEAR EDITOR: I want to say that I enjoy the letters in FARM AND FIRESIDE. I never lived on a ranch till five years ago I came to Washington and married a farmer, and have blessed the day I came to the country. I have a daughter and a niece to care for, and I have chickens and my three-room house to look after, but always find time to keep young. I have a camera, and enjoy it very much. I also have a piano and take music lessons.

I do my own laundry work, and was not shocked to read in FARM AND FIRESIDE some time ago, to "fold without ironing." About nine years ago I had typhoid fever, and my doctor told me that I should bring my sheets and pillow cases in fresh from the line and use them to induce sleep. The experiment was successful; the iron kills the sweet, fresh smell.

I find time to care for my garden, and right here I want to say that I don't have to get up till 6 A. M., and am ready to retire any time after 8 P. M.

I have an extra good husband, and he believes in giving the children a reason for wanting to stay on the farm. He gave our daughter a lamb and a goat, and she has two bunnies and a cat.

MRS. P. O. B., Washington.

Handles Grain with Blower

DEAR EDITOR: I see you want letters from farmers that have had experience with farm elevators.

We have no elevator, but handle our grain with a blower.

When threshing, we let the oats run into this blower (not the straw blower) which blows them to the granary in the top of the barn. We also use it to load wheat into cars.

With this blower one man can easily load a car in a day, while before it took four or five men two days and the hardest kind of work.

The blower sells for $25.

WALTER E. HOYT, Ohio.

Please Sign Your Letters

A subscriber in Kentucky who fails to give his name wishes some pointers on sweet clover.

Sweet clover is now recognized as a standard forage crop and all the facts known about it could not be held in a good-sized volume. This Kentucky subscriber is referred to Farmers' Bulletin No. 485, which may be secured from the United States Department of Agriculture.

Bits of Good Humor

The Test

MEDIUM—"The spirit of your wife is here now; do you wish to speak to her through me?"

WIDOWER—"Ask her where the dickens she put my summer underwear?"—Philadelphia Public Ledger.

Heard on the Train

"What book is that you are reading, Jim?"

"'The Sorrows of Satan.'"

"Well, I'll say this for you, Jim, you always do take an interest in the troubles of your friends."—Boston Transcript.

New-Fangled Farming

"Farm products cost more than they used to."

"Yes," replied the farmer. "When a farmer is supposed to know the botanical name of what he's raisin', an' the zoölogical name of the insect that eats it, and the chemical name of what will kill it, somebody's got to pay."—London Opinion.

Liked Walking

Little Bess and her father were several blocks from home.

"Do you think we'd better take a car or walk?" he asked her.

"I'd rather walk if 'oo will carry me," replied little Bess.—Woman's Home Companion.

Promises

PATIENT (to pretty nurse)—Will you be my wife when I recover?

NURSE—Certainly.

PATIENT—Then you love me?

NURSE—Oh, no! That's merely part of my treatment. I must keep my patients cheerful. I promised this morning to run away with a married man who had lost both his legs!

A pessimist is a person who is seasick during the entire voyage of life.

He Was Dry

The artist was painting—sunset, red, with blue streaks and green dots.

The old rustic, at a respectful distance, was watching.

"Ah," said the artist, looking up suddenly, "perhaps to you, too, Nature has opened her sky pictures page by page! Have you seen the lambent flame of dawn leaping across the livid east; the red-stained, sulphurous islets floating in the lake of fire in the west; the ragged clouds at midnight, black as a raven's wing, blotting out the shuddering moon?"

"No," replied the rustic shortly: "not since I signed the pledge."

EW

80% More Efficient
Endurance Doubled
By the Patented

HUDSON SUPER SIX TRADE NAME REG.

$1375
at Detroit

Patented by Hudson
December 28, 1915
Patent No. 1165861

Hudson Super-Six

Almost Twice Better Than the Best of Other Cars

THE enormous advantage of the Hudson Super-Six seems almost incredible. But remember this: The Hudson Company, which makes these claims, stands high in Motordom. And it never misrepresents.

Also, the Super-Six has proved its supremacy. It has broken all world's touring stock car records in official tests.

The greatest of former cars have been defeated. Sixes, Eights and Twelves—the finest and the costliest—have been outrivaled by it. So the Super-Six must be conceded the greatest car that's built.

VAST RESERVE POWER

The Super-Six motor is the same size as the Hudson Six-40 motor. It is light, simple, economical. It is very much like our previous motors, save in one respect. So it does not involve an experiment.

What we have done is to end vibration, which wasted power in friction. By simply doing that we get 76 horsepower from this small, light Six.

The legal rating of a motor of this size is 29.4 horsepower. At its best heretofore it yielded 42 horsepower. In the Super-Six the same size delivers 76 horsepower—an increase of 80 per cent.

No extra power is created, no extra fuel consumed. We simply save the enormous power which was wasted in vibration and friction.

ALMOST NO WEAR

We have invented a motor so smooth-running that endurance is probably doubled. This motor, in our speedway tests, ran for 1350 miles at a speed exceeding 70 miles an hour. That strain exceeded years of ordinary driving. Yet no part or bearing showed any discoverable wear.

It ran for 7000 miles in another endurance test without any discoverable wear. There never before was a motor so free from friction as to show results like that.

IT OFFERS YOU THIS

The Super-Six offers you enormous reserve power. The hardest roads and steepest hills are easy to the Super-Six.

It offers you quick acceleration, matchless flexibility, effortless performance under every hard condition.

It offers you quiet smoothness beyond anything known before. At every speed the Super-Six moves with bird-like motion.

It offers you doubled endurance.

It offers you wondrous economy. No ordinary driving requires more than a half-open throttle.

IN HUDSONS ALONE

The Super-Six is our invention, controlled by Hudson patents. So no other car contains a motor much more than half as efficient.

It will cost you less than a lower-grade car. Its enormous economy—its doubled endurance—will more than offset the price saving.

The Super-Six offers you the utmost in quality. It offers you luxurious bodies, built without regard to cost. In no respect does a finer car exist. And it offers the greatest value found in any high-grade car, because of our enormous production. Our Super-Six output for this season is $42,000,000.

See this car at the nearest Hudson showroom. Go for a ride and prove its vast advantage. After that ride, a car which lacks this Super-Six motor will not appeal to you.

7-Passenger Phaeton, $1375
at Detroit

Five Other Styles of Bodies

HUDSON MOTOR CAR CO.
Detroit, Mich.

World's Record Breaker
All Records up to 100 Miles

These tests were made at Sheepshead Bay with a 7-passenger Super-Six—a touring stock car—under official supervision of American Automobile Association.

100 miles in 80 min., 21.4 sec., averaging ***74.67 miles per hour,*** with driver and passenger.

75.69 miles in one hour with driver and passenger.

Two laps made at 76.75 miles per hour.

Standing start to 50 miles per hour in 16.2 sec. A new record in quick acceleration.

HUDSON SUPER SIX

The Red Side Wall and Black Tread

This handsome design and color combination, the trade-mark "red and black," now distinguishes Firestone Tires and gives distinction to any car.

You have become used to Firestone sturdiness and toughness, which means "Most Miles per Dollar."

You have learned to expect that Firestone resiliency will give you easiest, most reliable riding.

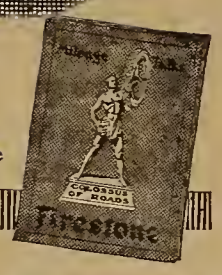
Now you have the greatest possible style and fine appearance which can be built into a tire.

Firestone

Specialized factory methods with the world's greatest distributing system enables us to keep down the cost to you.

Free Offer Send the name of your dealer and make of your tires and get our Cementless Tube Patch Free. Also copy of our new "Mileage Talks," No. 45.

Firestone Tire and Rubber Company
"America's Largest Exclusive Tire and Rim Makers"
Akron, Ohio **Branches and Dealers Everywhere**



I Want To Send You My 1916 Buggy Book FREE

Just drop me a postal and I will send you free and postpaid my big, new Catalog of Split Hickory Buggies. Shows 150 snappy new styles—wonderful money-saving values and a price splitting offer on every job that has never been equaled on high grade buggies.

SPLIT HICKORY

Every rig I show is a genuine "Split Hickory" throughout. Famous for style, beauty, lightness, easy riding, strength and long service. Think of it! For only $39.25 and up you can now buy a genuine "Split Hickory" direct from my factory on

30 Days' Free Road Test and 2 Years' Guarantee

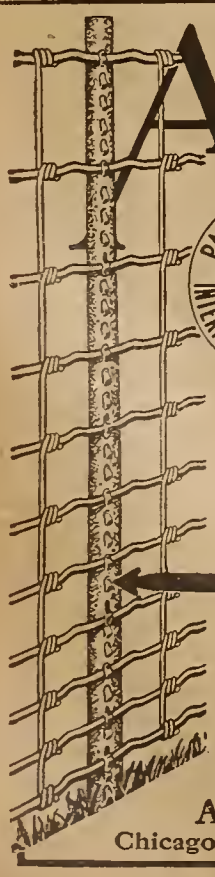
Write for the big free book today—see for yourself the wonderful bargains we offer. Also ask for my new Harness and Farm Wagon catalogs if interested. Address **H. C. Phelps, Pres.**

THE OHIO CARRIAGE MFG. CO., Station 44 Columbus, O.

Just Out

Catalog shows 150 other styles for $39.25 *and up*

American Fence and Steel Fence Posts



AWARDED PANAMA PACIFIC GRAND PRIZE INTERNATIONAL EXPOSITION

Big, full gauge wires—full weight—full length rolls woven with a mechanically hinged joint. Superior quality galvanizing—proof against hot sun, sleet and snow.

American Steel Fence Posts, cheaper than wood and more durable. Last a lifetime. Hold fence secure against all conditions.

Sent Free Write for booklet on how to set posts and erect fence. Every farmer should have it.

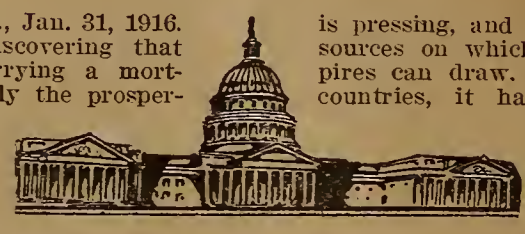
Dealers Everywhere

AMERICAN STEEL & WIRE COMPANY
Chicago New York Pittsburgh Cleveland Denver

The Land Mortgage

Richest Farmers Owe the Most Money

By JUDSON C. WELLIVER



WASHINGTON, D. C., Jan. 31, 1916.

PEOPLE are discovering that the farmer carrying a mortgage is generally the prosperous one, while the man without a mortgage is apt not to be prosperous. The most prosperous farming States are those with the most mortgage debt; the least prosperous farming States have the smallest mortgage burdens.

Congressman Helvering of Kansas in a speech recently made this very plain. From census figures he showed that the four Southern States of Georgia, Alabama, Louisiana, and Mississippi have a total of only $43,000,000 of farm mortgages; Wisconsin alone has almost ten times that much. Yet Wisconsin is an ideally prosperous farming State; the Southern States are the reverse.

These four Southern States have an average of three tenant farmers to two proprietor farmers, while in Wisconsin there are six proprietors to one tenant.

It's the same all through. The best agricultural States have the most mortgages and the most proprietor farmers; the poorest States have fewest mortgages and fewest proprietor farmers. The mortgage is the poor man's stepping stone to ownership. A poor man can't hope to buy a farm unless he can mortgage it. The South's trouble has been that there is no money to loan there on farm mortgages. Iowa owes more on farm mortgages than any other State—about $204,000,000. Nobody doubts that Iowa is quite an agricultural State, and yet Iowa's farm mortgage debt is just about twice the combined mortgage debts of these eleven Southern States: Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

The explanation is perfectly easy, but it isn't generally understood. It isn't the mortgage that hurts farming: it's the inability to get capital. Northern farmers can get working capital; Southern farmers can't.

But the argument that is having more effect on Congress than any other, in favor of a scientific system of helping the farmer to cheap capital, is tenantry. In 1880 the percentage of tenant farmers in the country was 25; in 1890, 28; in 1900, 35; in 1910, 37. That's a mighty bad showing, and it gives worry. The country needs more mortgages and fewer tenant farmers; a system of rural credits that will help in this direction will be useful. A system intended to "help the farmer pay his mortgage" is all buncombe. A lot of city Congressmen still think that's what we want. It isn't.

Here's a pointer from the Post-Office Department. The farmers are not selling so much by mail as they ought to. They are using parcel post more and more liberally in buying; but they are not patronizing it much in selling. A great effort has been made to popularize farm-to-table marketing by post. The cities and towns are full of people who want to buy this way, but they can't find the farmers who want to take their orders and give good, regular service.

Should Sell by Parcel Post

The mail-order houses and other enterprising business concerns went right after the farmer's trade as soon as the parcel post opened the way: they were organized, knew the business, and lost no time. The farmers weren't organized for any such enterprise, regarded it as experimental, didn't want to be bothered with it, and so the outgoing parcel mail from the farms is disappointingly small, while the incoming mail is bigger than anybody imagined it would be.

Maybe it was a queer place to go for such information, but the other day I went up to the British embassy to see if I could get an idea what's likely to happen to meat prices. I'm not authorized to quote anybody, but I came away with the notion that we have a period of higher prices for meats and dairy supplies ahead. It must be said that the foreign-trade experts have been bad guessers on this subject since the war started. Almost any of them would have said, fifteen months ago, that we would be having $10 hogs and easily $10 beef by this time. The market has fooled everybody since war started.

Why I got the notion that prices are certain to tend pretty steadily upward is that Germany and Austria are using every effort to get all the meats and dairy supplies from Holland, Denmark, Switzerland, and Scandinavia. The need is pressing, and these are the only sources on which the interior empires can draw. These four little countries, it happens, have been heretofore supplying a large part of the meat and dairy necessaries of Great Britain. I get the impression that the competition between Germany and Britain, each trying to these supplies away from the otl as reduced stocks and numbers of als to a low point, and that there will soon have to be heavier drafts on the United States. The allies have seemingly wanted to buy grain and meat, so far as possible, from other countries than the United States, paying with securities. They are compelled to buy other things here, and prefer to spread their trade around so as to keep their credit good everywhere. But our time is coming, and if the war continues it is pretty certain to see meat prices go very much higher. So the sharps insist.

Freight Rates Increase

But there is another factor than merely supply and demand, that may change matters. The world is getting fearfully short of ocean shipping, and everything points to probability that this will be progressively accentuated as the war continues. Our own commercial authorities are worried; wise men go so far as to express fear that the impossibility of finding ships may greatly affect prices on this year's crops. In ordinary times a bushel of wheat is taken across the ocean for almost nothing; sometimes actually for nothing, serving as ballast. But it is now costing about 40 cents to get a bushel to Liverpool, so that by the time our wheat gets to consumers there it is pretty nearly $2 wheat. There are some public men who declare, after their recent studies of the shipping problem, that the prices of this year's crops will largely be determined by the supply of shipping; we may have low prices here and very high ones abroad, merely because of incapacity to get the goods moved.

The Federal Trade Commission has been looking into conditions in the lumber business with some curious results. The country's consumption of lumber has decreased sharply of late, and the manufacturers are in a bad way, making no money and seeing no prospects of it. But despite this the retail prices hardly reflect any change in conditions. The commission opines that the retailing end of the business is so well organized that it can keep its prices up, and the manufacturers and timber-land owners have to stand the stress; the consumer doesn't get his share of benefit.

A few years ago the country went wild speculating in timber lands, and hoisted the prices unconscionably. Now these lands are largely capitalized at fancy figures, and the timber is being sacrificed to meet interest charges on the big capitalization.

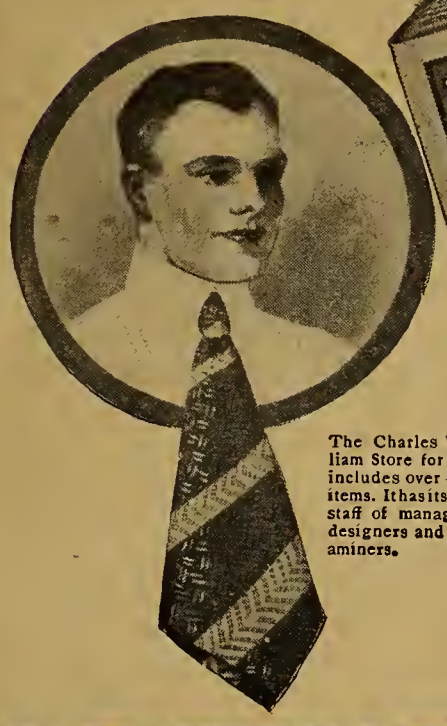
To a considerable extent the demand for timber is falling off because of use of cement, stone, steel, tile, and other substitutes. Cities use vastly less lumber than formerly because building regulations, to prevent fire, reject it. The country uses most of the lumber; and the country, in those sections where farmers own woodlots, is falling back on the old plan of putting in sawmills and cutting local timber, rather than buy from the dealer at current prices. The result is that individual and neighborhood production of lumber is increasing, while the big-scale, commercial production is being reduced. There is almost certainly going to be a period of cheaper lumber before long. How long we will have to wait for it is the question.

Congress has been appealed to for help in the binding-twine situation. An official of the Michigan state twine factory, operated in the penitentiary at Jackson, came here the other day to explain it all. A combination of financial interests in this country has got control, he says, of the sisal crop of Yucatan, and boosted prices almost out of reach. He calculated that twine would cost one third more this year than last, and last year it was very dear.

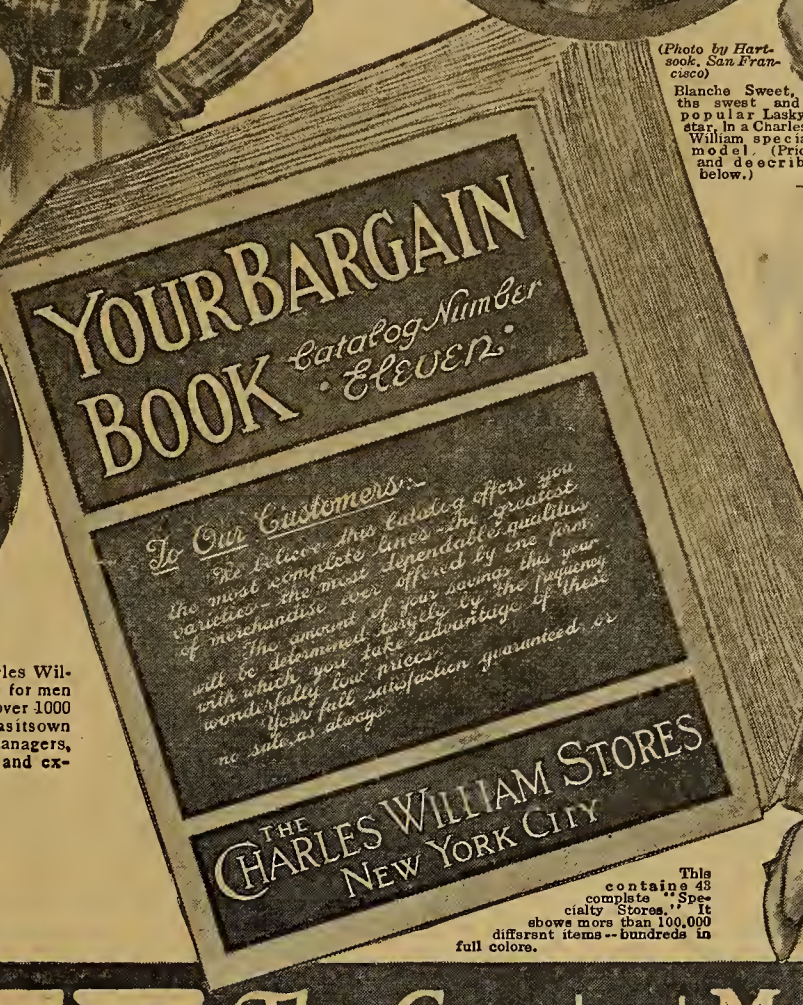
The Minnesota, Michigan, and Wisconsin penitentiary twine factories have all helped protect their States against excesses in twine prices in the past, but they are just as powerless against the sisal combination as anybody else. The sisal is controlled, and whoever wants it must pay the price the combination asks, or do without sisal.

E

(Photo by Hartsook, San Francisco)
Blanche Sweet, the swest and popular Lasky star, in a Charles William special model. (Priced and deecribed below.)



The Charles William Store for men includes over 1000 items. Ithasitsown staff of managers, designers and examiners.



This containe 43 complete "Specialty Stores." It shows more than 100,000 different items—hundreds in full colore.

FREE The Greatest Money Saving Catalog Published. More than 1300 pages

Write to-day for your copy

Women's dresses	$ .98	to $16.98
Women's hats	.98	to 5.98
Muslin underwear	.07	to 3.75
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Boys' suits	.32	to 8.45
Children's shoes	.80	to 2.60
Infants' dresses and coats	.25	to 2.98
Men's suits	4.95	to 19.50
Men's coats	11.50	to 29.75
Bedroom sets	16.65	to 91.85
Mattresses	1.90	to 21.60
Tables—Dining	4.15	to 24.65
Tables—Library and Parlor	1.20	to 18.35
Chairs—Dining	.85	to 3.85
Chairs—Upholstered	1.48	to 27.35
Carpets, per yard	.70	to 1.35
Rugs	.58	to 39.70
Linoleum, per yard	.33	to 2.85
Chinaware and Glassware	.04	to 15.45
Curtains, per pair	.23	to 6.75
Dress goods, per yard	.05	to 2.00
Ice boxes	4.29	to 56.25
Sewing machines	12.15	to 28.65
Silverware, each	.12	to 5.25
Gas ranges	1.25	to 17.67
Table linens, per yard	.21	to 1.05
Table linens, ready to use	.54	to 7.81
Watches	.69	to 40.00
Rings	.23	to 375.00
Clocks	.58	to 15.98
Lamps	.10	to 12.98

1302 pages of new merchandise! 154 pages of special offers in actual colors! The newest merchandise—the widest possible variety and selection—and values greater than ever before offered even by mail. Regardless of what other books you may consult, get a copy of this one. Write to-day for your copy.

An absolutely free copy for you is off the press, ready to mail to you the moment we get your request.

A postal sent now, a penny spent today, will save you so much, you will always be grateful to us for having persuaded you not to delay writing.

Ours, the most remarkable success in America's business history

The Charles William Stores from the beginning have built their business on the idea that money saving mail order prices should be extended to *Merchandise of Quality*, yet sold at mail order prices.

Another idea, which the Charles William Stores alone have, is the idea of a great group of specialty stores—43 of them—all managed with the same capital. This means that each store is under the direction of a man devoting his entire time to the one store, yet that each store has the *big cash-buying facilities* which come only from *uniting* the purchases of the 43 stores.

Write for your copy of this big Bargain Book now, and see what this new combination—styles originated by specialty stores and prices secured by a mammoth organization—means in the way of genuine value and variety for you.

Thousands of clerks to handle your order promptly

The Charles William Stores have thousands of clerks to see that orders are filled promptly. That is why our service is famous. See what Mrs. Manley says about it:

"My skirt arrived last night and I wish to thank you for the prompt delivery. It was the quickest service I ever received from a mail order house, and hereafter I shall send all orders to your store." Mrs. L. C. Manley, Cherry Creek, N. Y.

IMPORTANT TO OUR CUSTOMERS

If you are among the thousands who already buy from the Cbarles William Stores, it will not be necessary for you to write for your copy of this Free Bargain Book. As soon as it is ready it will be mailed immediately to all of the Cbarles William customers.

What This Book Contains

The Clothing Store: 376 pages of the latest New York styles in clothing for all the family.

The Jewelry Store: 46 pages of Jewelry—a marvelous variety of exquisite jewelry for every occasion.

The Dry Goods Store: More than 50 pages of the newest dress goods, beautiful laces, white goods; a complete stock of notions, etc.

The Drug and Toilet Goods Store: Nearly 50 pages of pure, well-known remedies; reliable beauty requisites, rubber goods, etc.

The House Furnishing Store: 127 pages of furniture, carpets, rugs and upholstery—practically everything needed to furnish the home.

The Hardware, Farm Implement and Vehicle Store: 248 pages showing a remarkable variety of everything needed about the farm and for the care of the live stock.

Other Complete Stores

22 pages of books for everyone—popular fiction, children's books, Bibles, dictionaries, educational works, etc.

27 pages of beautiful china, glassware and silverware for your table—4 pages in color.

50 pages of Columbia Grafonolas, Talking Machines, and Musical Instruments of all kinds—also latest records.

9 pages of wonderful toys for the children.

62 pages of cameras, fishing tackle, hunting supplies and sporting goods.

55 pages of building material—roofing, paint, wall paper, etc.

28 pages of bicycles and auto supplies—all standard, well-known products.

The Berenice A very fetching child's dress of amoskeag Gingham, with wide belt of same material, piped with solid color Percale in contrasting color. Cuffs, pocket and Sailor collar edged with two rows of fancy stitching. Front closing, elbow sleeves. Sizes 6 to 14 years. State size and color. No. 53124A103, Pink with blue trimming; No. 53124A104, Tan with blue trimming. Prepaid **49c**

The Primrose This dainty dress is of solid color Percale with smart, box-plaited skirt—very serviceable. The belt, the front trimming and the square collar are of bright plaid and the collar is edged with narrow lace. Buttons up the front with fancy, crocheted buttons. Elbow sleeves. State color and size. Sizes 6 to 14 years. No. 53124A100, Blue; No. 53124A101, Pink; No. 53124A102, Tan. Prepaid **49c** Each; 2 for **95c**

The Arlington Silk Cravat, made in plain colors or fancy striped and figured effects. Mention color wanted. No. 53133-5034 - - - - - - Prepaid **45c**

Men's New Style Collar — this most popular style collar this season. Notice how the front curvee to allow space for the cravat. Regular price, two for 25c. No. 53133-4821. Our special prics per half dozen - - - - Prepaid **59c**

The Corinne Blouss of fine Voils effectively combined with embroidered Organdy for front of blouse and collar. Deep bsmstitched, turn-back cuffs. Back of blouse tucksd. Becomingly trimmed with narrow lacs in filst pattern. Wbite only. Sizes 32 to 44 buet. State size. No. 53124A2286. Prepaid **98c**

The New Yorker A most attractive blouse of washable Foulard—an exact copy of a very high-priced model. Has the very newest "zig zag" front closing, as illustrated. Deep, pointed, turn-back cuffs. Sizes, 32 to 44 bust. State size and color. No. 53124A2260, Navy blue plaid; No. 53124A2261, Brown plaid; No. 53124A2262, Black; Prepaid **98c**

The Blanche Sweet Hat A splendid Spring and Summer bat mads with ths favorite transparsnt brim. Crown of hemp straw finisbed with a band of silk-backed vslvet ribbon. Brim of cbiffon finished with an edging of hemp straw and satin. Modishly trimmed with a largs rose of silk and muslin. In all black, all wbite, black and white, military blue, American Beauty, pink or military blue, with American Beauty pink or military blus rose **$2.49** No. 53116A50 - - - - - - - - -

The Hyacinth Charming afternoon dress of Flowered Crepe cleverly combined with piqus cuffs and new sailor collar, trimmed with narrow lacs edge in dainty dssign. Flars skirt effectively made witb looss yoke, hip length. Invisibly closed in center front with self-covered buttons. Sizes Misses 14, 16, 18 years; Women's 32 to 44 bust. State size and color. No. 53124A1355, Blue flower; No. 53124A1356, Lavender flower. - - - - - - - - - - Prepaid **98c**

The Continental Smart Spring tailored suit of All Wool Serge. Coat is in this season's favorite style—hip length, trimmed and closed with self covered buttons. Satin lined. Well made throughout and finished with satin-covered shields. Skirt, belted with belt running through loops, in the styls of many of the newest skirts this season. Side pleats inserted below knee give the correct flars to the skirt. Sizes 32 to 46 inches bust. State size and color. No. 5319A627, Copenbagen blue; No. 5319A628, Navy; No. 5319A629, Black. Prepaid **$7.98**

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Ice Water And Corn Won't Make Winter Eggs

BUT Red Comb Meat Mash proves its title, "The Great Egg Maker," wherever it is used. And it costs you less than you could buy the materials for and mix them yourself. Farmers and poultry keepers are making a fine profit from their flocks *right now*. You can too. One farm woman writes that her hens paid a yearly profit of $3.06 each. Another that her hens lay all winter long. *Hens conditioned on Red Comb took the special international prize for cold weather laying.* Join the profit makers. There is a Red Comb feed for every poultry purpose. Not excelled as a conditioner of market birds and show birds. Ask your Red Comb dealer.

Edwards & Loomis Company
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RED COMB POULTRY FEED

Red Comb Meat Mash
The Great Egg Maker for Chickens, Ducks and Turkeys

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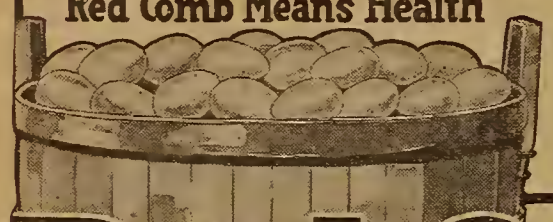
Red Comb Means Health



Red Comb POULTRY FEED

There's a Reason for These PHENOMENAL HATCHES

"Have brought off two 100% hatches in my Progressive." W. H. Thomas, Oak Flat, Ark.

"Progressive Incubator hatches average close to 100%." O. P. Parrish, Rutledge, Mo.

"Every single egg hatched that had a chick in it." Roy Green, Chattanooga, Tenn.

"Four fine hatches averaged from 90% to 100%." C. A. Walker, Charleston, Ill.

PROGRESSIVE INCUBATORS bring off Blue Ribbon Hatches like these because they are built from the best materials with latest improvements. Most consistent hatchers on the market. Biggest bargains.

$7.85 LOWEST PRICE YET FOR BIG 155 EGG INCUBATOR

GENUINE CALIFORNIA REDWOOD. Hundreds of dead air cells to protect eggs against sudden changes. Perfect Copper Hot Water Heating System, Double-disc Temperature Regulator, Heavy Safety Lamp, Double Doors, Strong Egg Tray, Reliable Egg Tester, Accurate Thermometer.

Write for new 1916 Combination Offer and Free Poultry Book with records of big hatches.

Incubator alone $7.85--with Brooder $9.85. Frt. paid E. of Rockies. Shipped complete all ready to use--no extras. Money back with 8 per cent interest if not found as represented. ORDER TODAY.

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Wisconsin Wins In Big Hatching Contests Every Year

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Wisconsin Incubators have long proved their wonderful hatching qualities. Competing with every make known, they won in the five big annual National Hatching Contests. Think of it. Five consecutive victories. That certainly proves you can't make a mistake. Shipped on **30 Days' FREE Trial**

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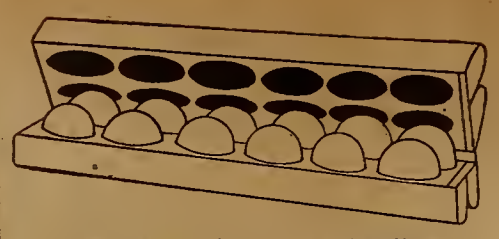
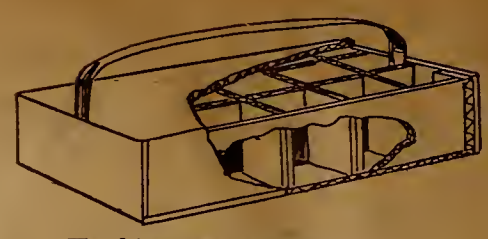
Wisconsins have hot water heat, double walls, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Made of finest, select, clear **CALIFORNIA REDWOOD,** not pine, paper or other flimsy material. Incubator finished in natural color—not painted to cover up cheap, shoddy material. Incubator and Brooder shipped complete with thermometers, egg tester, lamps, everything but the oil. This is the best outfit you can buy. If you don't find it satisfactory after 30 days' trial, send it back. Don't buy until you get our new 1916 catalog, fully describing this prize winning outfit. WRITE FOR IT TODAY. You can't make a mistake in buying a Wisconsin. On the market 15 years.

WISCONSIN INCUBATOR COMPANY, Box 76 Racine, Wis.



Protects eggs from rough handling



Hatching eggs require extra care

When an Egg Travels

Two Dozen Crack Before Case Reaches Buyer

By B. F. W. THORPE

ANYBODY knowing all about eggs is aware that cheap corn makes cheaper meat and eggs, comparatively speaking, than can be produced where King Corn has to be coaxed to do his best.

Eggs in excelsior ready for shipment

Soon after the corn-belt hen begins to cackle loudest as spring approaches, white eggs and brown eggs literally by the million begin to roll eastward. Carload after carload, crated and packed supposedly with care, joins the procession going to the Eastern markets.

But in what condition do these eggs reach their destination—New York, Philadelphia, Boston, Baltimore, and other centers of less commercial importance?

Government investigations show that two dozen eggs out of every thirty dozen cased are found cracked, mashed, dented, or leaky. This means that over one hundred million eggs reach New York City alone every year damaged by some degree of breakage. These eggs, reckoned at 30 cents per dozen, the average price in 1915, mean a loss of three million dollars in 1915 to the poultry industry in the eggs delivered to one city.

Analysis of this breakage shows that nineteen eggs in every case were cracked before being loaded on the car. Before the eggs are delivered to the retail market five more eggs in each case are cracked or broken.

Inspection of thousands of crates after reaching their destination shows that old, poor, and flimsy cases which have been carelessly and incorrectly nailed up are responsible for much of the breakage.

Unless the covers are properly nailed the motion of the cars and the weight of the overlying cases cause the angles at the corners of the cases to spring and work.

The case, after losing its rigidity, allows breakage, which increases as the journey is extended.

A great deal depends also on the fillers—the little cardboard cells which receive the eggs. Also the "slats," or cardboard sheets, between the layers of eggs and at the top and bottom of the case must be in good condition. Unless these packing adjuncts are strong, elastic, and generally fit the breakage loss will be double what otherwise would occur.

To Prevent Jolts and Jars

Even the little projections around the outside of the fillers, which keep the nearest tiers of eggs from receiving jolts and jars from the side of the case, are a big factor in preventing breakage.

After the fillers have been wet and weakened by "leakers" the springiness of the cardboard is lost.

Shippers of eggs cannot at present prevent the rough handling of cases by the railroad employees, but they can make sure that the cases are in perfect condition and the covers are properly nailed on.

My own problem is to pack *hatching* eggs for shipping. Several expedients are employed to insure safe carriage, but many experienced shippers of hatching eggs favor the old-fashioned splint basket and plenty of first-class excelsior as a shock absorber.

Each egg should be the center of a ball of excelsior so that when in position in the basket it has a complete wrapper of excelsior about it the size of a medium-sized teacup.

The splint basket is first lined — bottom, sides, and ends—with a layer of the excelsior, then the balls of excelsior-covered eggs are placed in the lined basket snugly, so that there will be no movement.

If the balls of excelsior containing the eggs are correctly made there will be no need for layers of packing material between the successive courses of eggs, but unless the excelsior egg covers are made right it is the part of safety to put layers of excelsior between courses.

Baskets Need Springiness

When full the basket is topped with a generous layer of excelsior heaped up a couple of inches above the rim of the basket. A cover of burlap is then firmly sewed over the contents by working the needle (a long darning needle is best) back and forth through the holes between the rim splints. As the sewing proceeds, the burlap is drawn down snug and taut. When completed the basket is much the same as a rubber ball for springiness. Over the top should be fastened a carboard on which the word "eggs" appears boldly.

When the work has been done just right it is extremely difficult to break eggs thus packed, with any ordinary or even quite rough handling, and the liability of disturbing the germ spots and mingling the contents of the eggs will be greatly lessened.

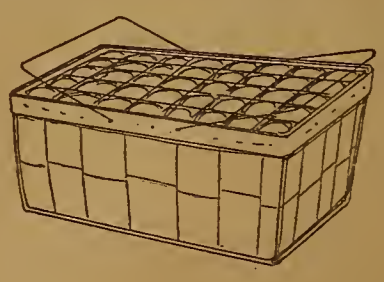
When larger shipments are to be sent, inexpensive splint bushel baskets are about as satisfactory as the splint vegetable basket, and will contain three or four settings if packed with excelsior as above recommended.

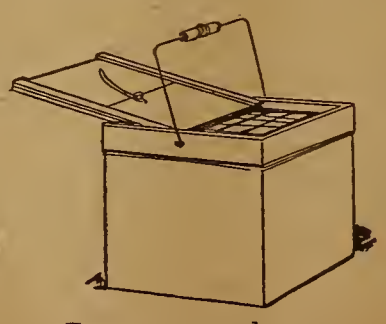
It is not difficult to fasten splint bail handles to bushel baskets before the eggs are packed, by means of small wrought nails that can be clinched, or with wires. Then, after packing, the bails can be firmly tied together above the basket, whether bushel baskets or vegetable baskets are used. These bails, when fastened above the basket, prevent other packages being piled on the eggs during shipment.

For 100-egg shipments, or larger quantities, a barrel packed as described, but using even more of the excelsior and a burlap cover fastened over the top, answers better than boxes. The barrel will be handled more carefully by rolling and sliding, and will be kept right side up as a result of the burlap cover and the conspicuous danger tag which is sewed onto the top.

Personally I prefer to ship not over 50 or 60 eggs in one container, using splint baskets of proper size for the purpose.

But safe traveling is not the only requirement for good hatches. The egg must be right when laid, and kept fit till the chick breaks out of it. The eggs should not be over a week old when shipped. They should be laid in clean nests so that the shells will need no cleaning. Washing or scouring is bad because it closes the shell pores.

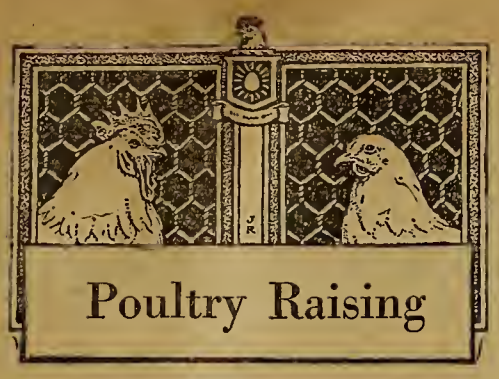




Easy to carry and open

Metal handles and folding fillers are talking points for the veneer basket above. Safety first demands adequate protection and careful handling for either eggs or chicks

Box for day-old chicks



Poultry Raising

Black Hens Stung

By L. L. Winship

BEEKEEPERS have long noted the dislike of bees for black color. I had some rather expensive proof of this dislike last summer. My apiary is a small one. I have a half-acre lot on which is a large house, barn, hen house, garage, and what I call my bee house, where my equipment for the apiary is kept.

We have a tight board fence around a yard about 10x30 feet where the bees are kept. The hens also occupy the same yard to economize room.

In July I took off and extracted my honey, averaging about 100 pounds per colony. The bees did not seem to be very cross, and it took very little smoke to subdue them.

The next day, very early in the morning, I went to the hen house to feed the hens. The building seemed to be fairly alive with bees, which came in every crack and cranny. I did not wait to feed the hens or see what the bees were up to, as it was quite too warm in that quarter for comfort. I went to the bee house, put on my veil and gloves, lighted my smoker. and sallied forth.

I blew clouds of smoke into the hen house, but as soon as I stopped a minute the building seemed to be fuller than ever of bees. I saw that here was not the root of the trouble, so went into the yard. Every bee in the yard seemed to be trying to do all the deviltry it could, and seemed to be sorry that it did not have more than one sting to lose.

I smoked the entrances to all the hives well, and the bees quieted down. As soon as possible I began to look for poultry. I found that only a few of the White Leghorns were stung, but that the Black Minorcas were living pincushions. I might say that the Minorcas were dying pincushions and be entirely truthful, as I lost eight or nine of the choicest ones. I found Minorcas lying about the yard, and all stung so badly that they could not get up. If there is any virtue in bee stings for rheumatism I feel sure that my Minorcas will be immune.

If bees do not dislike black, why did the poor Black Minorcas get the full benefit of the stings while the White Leghorns received little attention from the furious bees?

When Feeding Meat

By T. Z. Richey

IN FEEDING meat or animal food of any kind, one must be certain that it is absolutely fresh. The feeding of meat that is only slightly tainted may not cause trouble, but in feeding such meat one never knows when he is going to overstep the limit and feed meat that is reeking with limberneck germs. Discard all meat that gives off a spoiled odor.

In feeding bone one should be especially careful. Bone may have all the appearances of being fresh when the inner portions and marrow are in an advanced state of decomposition.

The commercial article of beef scrap is never above suspicion. When made from fresh meat, cooked, and stored properly, beef scrap will keep pure and sweet indefinitely. When spoiled meat is used, the cooking merely arrests decomposition, and such scrap, when fed to poultry, may cause trouble. Before feeding beef scrap or beef meal I always test each bag. This is done by taking a small quantity, say half a pint, adding water, and boiling. If, in boiling, it gives off a wholesome odor, I know the scrap is a wholesome poultry food. Commercial beef scrap that smells like fertilizer is fertilizer, and should never be used for poultry food.

Beef scrap that varies in color and is full of hard lumps should never be fed without testing.

Our Poultry Cover

OUR cover this issue is a painting of Wilburtha King, first-prize cockerel, champion male, at Grand Central Palace, December, 1913; first-prize cock and champion cock at the Coliseum Show, Chicago, December, 1914; and first-prize cock at Hagerstown, Maryland, 1915. He is almost perfectly sectioned, has a beautiful long back, and long, well-spread tail, always carried at the proper angle. He was sired by Boston Laddie. Wilburtha King has always been a wonderful breeder. Among his get is Peter the Great, prize cock at the Palace this year.

The Next Issue News

Volume I Farm and Fireside Editor's Office *Number 6*

Raises 1,400 Bushels Apples from Three Acres

An Oregon apple grower raised 1,400 bushels of merchantable fruit from less than three acres last year. He sold some of the apples for $2.25 a bushel. How did he do it? What is the secret of his success? There isn't any secret. You can do the same thing if you will follow his plan of taking care of an orchard. O. H. Barnhill tells all about this orchard success in the next issue of FARM AND FIRESIDE, the February 26th number.

This tree produces 27 boxes of apples

To Get More Money for Your Crops

A Michigan farmer received 10 cents a bushel more for his potatoes and 50 cents a bushel more for his beans than he had been getting. And he bought flour and other provisions cheaper than he had ever bought them before. Ray A. Fuller is the man. He will tell about his experience in the next issue. On the same page A. R. Thomas tells how he made $960 on a prune crop, and Mrs. D. D. Chapin tells how she made $46 from $1 spent for 200 strawberry plants. Other interesting garden and orchard experiences will appear in the next number, February 26th.

When a Worm Lives in an Apple

A tiny worm hatched from an egg as big as a pinhead. It crawled into the open end of the apple and ate its way along the core. The apples in this orchard aren't wormy any more. An article in the next issue of FARM AND FIRESIDE tells why.

Tells How to Kill Garden Pest

"A beetle half an inch long, striped on the back with two broad yellow stripes and three black ones, ate holes in the young leaves of my cucumbers, and melons, and squash last summer. The adult beetle ate the leaves, and while doing that spread a bacterial wilt that killed the vines. The young beetles in the larvæ or worm stage were chewing away at the roots." This gardener knows how to kill the beetles and tells how in the next issue.

Here is a practical tomato trellis

When It's Spraying Time

"Spraying is now so universally carried on, and so successful when used with judgment, that we'll talk about spraying machinery," says a contributor in the next issue. And he describes and explains about sprayers from the small hand machines to the big power outfits. There's a full page of pictures showing spraying machines in the garden, orchard, and field.

10 Pointers about Incubators that you ought to know FREE!

Make no mistake—get this book of *Facts* before you give up one single cent for an Incubator!

Page 2
You want *your* Incubator not only to suit the manufacturer's ideas, but to please *you*. Read the guarantee on Page 2, the strongest ever written.

Page 2
Freight is a big item. See our *prepaid freight offer* on Maynard Incubators on Page 2—it saves you money.

Page 4
"Special features" that don't help to hatch chickens, soon become more nuisance than advantage — beware of too many freak features. Read Page 4 carefully.

Page 7
150 Egg Hatcher—will you pay $5.42 or $22.00? Why? Before you make up your mind get the facts on Page 7 of this book.

Facts—solid, sound facts—naked, unvarnished facts—is what this new book on Incubators gives you. Send no money, make no obligation — the book is free if you are interested in buying an incubator and want to pay only for *what will hatch chickens*, and not for fuss and fol-de-rol!

The Charles William Stores have cut the dead limbs clear off this incubator question for you, and laid it out bare—on a straight-fact basis.

This book tells you first just how *little* you can get along with in an Incubator in order to hatch out your eggs successfully; shows you in clear illustrations and complete specifications, Incubators that will do it, and quotes you prices on them lower than you ever saw such Incubators quoted at before. Think of this—a

150 Egg Incubator, $5.42

—guaranteed to do the work or you get your money back—strong, reliable, practical, economical in operation—think of that, and you get an idea of what revelations this book shows you! But that is not all—this new incubator book then goes on to show you from the ground up what extra points about an Incubator *really add to its value*—not ornaments or frills; but *labor savers*. First comes the addition of hot-water heat, saving part of the work of watching your heating system, and saving part of the risk to your eggs if you ever should let your burners run out of fuel. Here again you get an inkling of the sensational *facts* in this book, when we tell you that it shows you

Page 7
A strong, practical Incubator guaranteed to hatch, guaranteed to satisfy you, or your money back, at $4.80 — every detail given complete on Page 7.

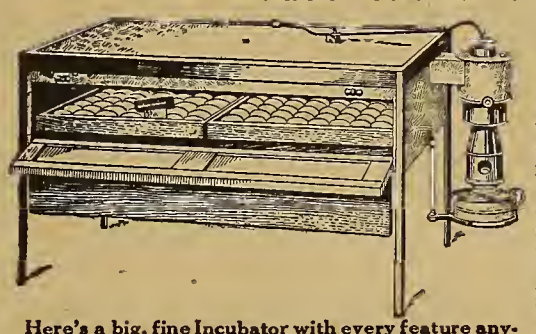
Page 8
Hot-Water Heated Incubators—every year improvements are offered, some practical some good for nothing; what's the most practical system right this minute? What should it cost you? Read Page 8 of this book.

Page 9
Suppose you want the most *complete* 250 Egg Incubator made—all the improvements that count—should you pay $14.95 or $32.00? Don't spend your money till you have read Page 9.

Page 12
Metal-covered, Hot-Water Heat, Price $9.40 to $13.55—if you want a Metal-Covered Incubator you want to study Page 12 before you buy!

Page 17
You can buy a Maynard Hot-Water Heated Incubator for $6.15 or you can pay $15.00. What will you actually get at each price? Read Page 17 and settle the question right.

Hot Water Heated at $6.15



Here's a big, fine Incubator with every feature anyone could need, Price $13.55 for 240 Egg Capacity, smaller size $9.40, and you couldn't get one that would hatch chickens better if you paid $100.

If you want the convenience of hot-water heat, why, there's the extra price it's really worth!

You buy *any* Incubator, of *any* size, at *any* price, without first reading the solid facts in this free Incubator Book, and you will be making a mistake! You don't want your Incubator as a piece of furniture, or a piece of show-machinery, and you can do better by saving the cost of fine cabinet work and burnished metal on your Incubator and putting it into real furniture for the house. This book shows *all* the improvements that can be put upon an Incubator to help incubation — every one of them — and quotes you

Lowest prices on every desired grade

If you want to have *all* the genuine conveniences, that really play a part in operating an Incubator — not frills and furbelows, mind you, but hard-fisted helps—why, in this book you can see just such an Incubator—the Maynard Standard—as complete as you want it—and the price—is just $14.95 for 250 Egg Capacity, $11.25 for 150 Egg Capacity, and $8.60 for 80 Egg Capacity! Think of it!

And remember, all the time, every one of these Maynard Incubators, whether you buy the smallest and simplest one at $4.80, or the largest and most convenient one at $14.95, is *guaranteed* to hatch every hatchable egg — the only difference being in the degree of personal attention and labor required in operation, and in the egg capacity. And when you can buy an Incubator just suited to your real requirements at such prices—

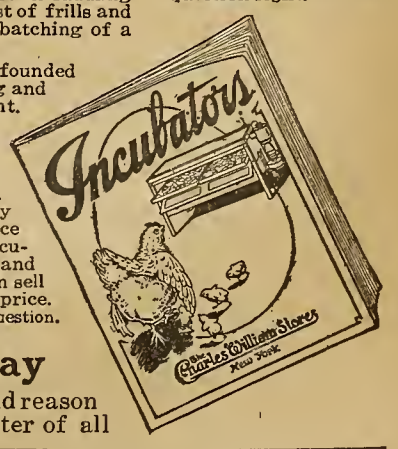
Special

"Egg capacity" can only be estimated. Buy your incubator by actual size of egg trays in inches, and then you *know* what you're getting. This book gives actual tray-sizes in inches.

What's the use of paying more?

Take that question home to your heart and ponder it! What's the use of paying more? You want your chicks to yield you the biggest possible profit, so where's the sense in saddling on them right at the start, the cost of frills and furbelows that don't affect the batching of a single egg?

The Charles William Stores are founded on the one big policy of carrying and selling only what its customers want. We have no space to store, or time to spend on merchandise which we must *persuade* you to buy. The Incubator Store has no hobbies in Incubators to push on you, no freak "features" or fancy models of Incubators we want to force on you—we build every Maynard Incubator to fill a certain, known need, and having no fancies or hobbies, we can sell you each model at the very lowest price. Get the real facts about the Incubator question.



Send for this free book today

Get these hard-fact Pointers on Incubators and reason the whole thing out for yourself. Strip the matter of all the fancy notions that others have tried to saddle on it. Then, when you've got the gist of the whole Incubator proposition, in a way it was never put up to you before, why, if you then want to buy a combination of Incubator and play-thing, you can buy it, but you buy it knowing just how much of the price is for hatching out the eggs and just how much is for fol-de-rol. But, if you decide you want an *Incubator—and nothing but an Incubator*—you'll order a Maynard Incubator because you never saw or heard of guaranteed Incubators at the prices quoted in this book. Get the *facts*—get them now—simply fill out and mail this coupon.

I want the facts about Incubators

My Name.....

R. D. or Street Address.....

City and State.....

Mail to the CHARLES WILLIAM STORES
536 Stores Building, New York

The Charles William Stores
536 Stores Building, New York

TOM BARRON, an English poultryman, took the lion's share of first honors in the American poultry contests for the first two or three years. This White Wyandotte, owned by Mr. Barron, laid 282 eggs in the third North American Contest. During the third and fourth American contests, American hens carried off most of the first honors.

I TOOK up breeding pure-bred chickens seventeen years ago with a view of combining show points and utility," writes S. H. Page of Iowa, "and in competing for seven Barred Rock state cups my birds captured six." Mr. Page owns the hen pictured here. She laid 254 eggs in the Third Missouri Contest. She was sired by a cockerel that was twice a blue-ribbon winner. Mr. Page's stock has been bred scientifically for heavy egg production for several years.

THIS is Lady Laymore, a White Leghorn owned by O. E. Henning of Nebraska. She laid 286 eggs in one year, and held the championship record for a year. She made her record in the Third Mountain Grove Missouri Contest.

MY PEN of Barred Rocks sent to the Fourth Connecticut Contest was selected from my farm flock," says Merrit M. Clark of Connecticut. "I had never trap-nested my stock, and had no means of knowing just how high individual records they were making. I did know they were exceptionally heavy winter layers. This hen laid 235 eggs, and three of her pen-mates 217, 216, and 203 eggs respectively, in that contest. Six of the Barred Rock hens in Pen No. 6, in the same contest, known as the 'sour-milk pen,' were my stock. This pen had four hens with records ranging from 203 to 254 eggs."

Twenty Egg-Laying Stars and Their Records

THESE are lively days for the American hen. For generations the common attitude towards chickens has been "a hen is a hen." But of late it has come about that a real hen is two or three hens in one. Most important of all, it has been shown that the "three-in-one" hen costs but little more for maintenance than her loafing pen-mates.

Since the American egg-laying contests began four years ago, some six or eight thousand hens have taken part in these egg races. Besides the three national and international contests, there have been several local contests. The hens pictured on this page are merely a score among hundreds that have won distinction by laying well above the 200-egg mark.

THE Connecticut Experiment Station has been experimenting with sour milk as a substitute for meat scrap for several years. The sour milk is fed fresh every day, allowing the hens all they want. The results show that sour milk is equal to meat scrap as an aid to heavy laying. This White Leghorn and her nine pen-mates had no animal food except sour milk during the third contest year. This hen laid 255 eggs, and with her nine mates yielded 2,083 eggs.

OLD FORGE Poultry Farm is stocked with more than 1,000 Buff Orpingtons, and is conducted as a commercial proposition. The hen shown here is Princess. She laid 229 gggs in the Third North American Contest. The plan of Philip H. Glatfelter of Pennsylvania, her owner, is to combine heavy-laying and exhibition stock. In 1914, 84 of Mr. Glatfelter's birds won 78 premiums and 11 specials at poultry shows.

THIS Columbian Plymouth Rock shared with a Nebraska White Leghorn the distinction of holding the American certified championship for one year for best laying. She is owned by J. M. Jones of New Jersey, and made her record of 286 eggs in the Third North American Contest, Thorndale, Pennsylvania.

THIS hen, Bizzy-Izzy, made a record of 243 eggs in the Third Missouri Contest. Her grandam laid 204 eggs in the Second Missouri Contest. The dam of Bizzy-Izzy's sire laid 227 eggs in one year. Bizzy-Izzy is a Black Orpington. She is owned by O. E. Henning of Nebraska.

LADY EGLANTINE, the first and only hen in the world to produce 300 eggs in a year under official supervision, is a White Leghorn. She laid 314 eggs in the Fourth North American Contest, held last year, at the Delaware Experiment Station at Newark, Del. Lady Eglantine is owned by A. A. Christian of Maryland.

THE plan of C. A. Crompton, Jr., of Vermont, of breeding rose-comb Rhode Island Reds, followed for seven years, has been to place vigor above everything else. He used trap nests as a help in detecting the best layers for several years. From the foundation stock thus obtained he has selected a breeding pen each season to perpetuate the laying trait. This hen laid 257 eggs, taking the highest individual honors in the Fourth Connecticut Contest.

WHEN beginning to develop a strain of Silver Wyandottes six years ago, Mrs. Lena C. Bray of Missouri added new blood every year, and was continually buying new males, but she soon found it impossible to make progress toward her goal—heavy egg production—by out cross-breeding. Mrs. Bray then began line-breeding. In the Third Missouri Contest the hen pictured laid 233 eggs. In local shows her birds have scored from 90 to 94½.

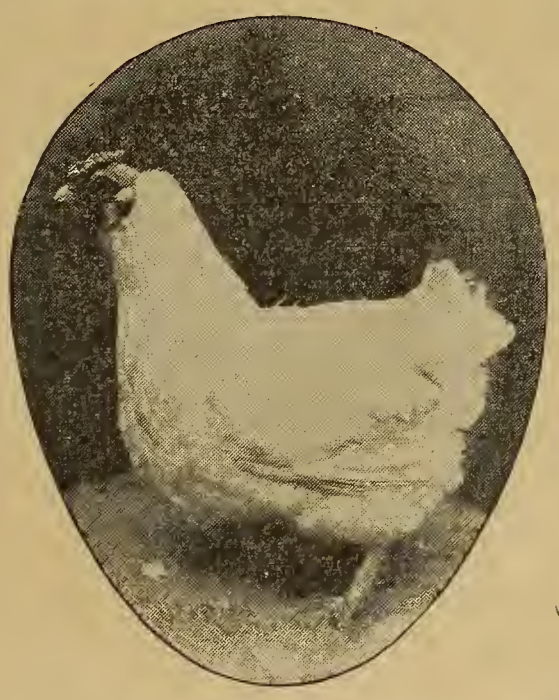
LADY SHOW YOU, White Plymouth Rock, made the sensational record in the Second Missouri Contest by laying 282 eggs. Her feat was equaled the same year by Princess Didit, a White Leghorn of English blood, in the North American Contest. Lady Show You was reported sold by her owner, J. A. Bickerdite of Illinois, for $800.

THE White Plymouth Rock hen shown here laid 247 eggs in the Third North American Contest, and her pen-mates laid 239, 233, 192, and 161 eggs respectively. While breeding this strain for the past ten years, C. E. Reed of Pennsylvania has practiced the plan of compelling his breeding stock to go outdoors every day during the winter, after the snow is shoveled away. By this plan he is able to get eggs that have a fertility test of 85 to 97 per cent in February and March. He sold his pen of hens for $300.

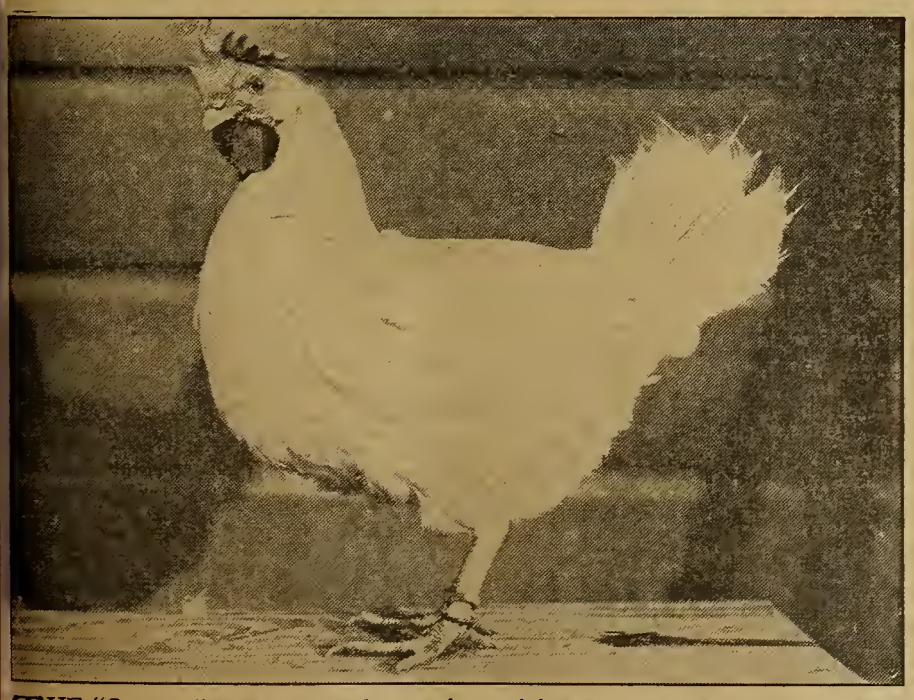
TILLY, the White Wyandotte that made a record of 254 eggs in the Fourth Connecticut Contest, is merely a good representation of a farm flock, according to Mrs. R. W. Stevens, her owner. Mrs. Stevens, who lives in New York, desires to raise heavy layers with pure white plumage. The breeding plan now followed is to keep several unrelated pens of birds from which to select breeders that will not be directly related. Cockerels from outside are not brought in for breeders unless their lines of breeding are known.

THIS Salmon Favorelle, owned by Charles Carroll of Maryland, made a record of 230 eggs in the Fourth Connecticut Contest. Mr. Carroll raised this hen from stock he imported from France. She is inbred, as her sire and dam were half brother and sister. A full brother of this hen took first honors for the breed in the 1915 Madison Square Garden Show. This variety is popular in France, but is not so numerous in the United States.

I HAVE come to believe the White Wyandotte cannot be overestimated as a general-purpose fowl," writes William F. Scheid of Pennsylvania. "Hardiness and docility make them perfectly adapted for farm flocks or back-yard operations. The hen pictured laid 265 eggs in the Third Missouri Contest, and with her pen of nine mates made a pen record of 2,006 eggs. My strain carries a large proportion of English blood." One secret of Mr. Scheid's success is his opportunity to select his pens from many pullets. He advises line-breading to experts only. Birds showing any weakness are killed.



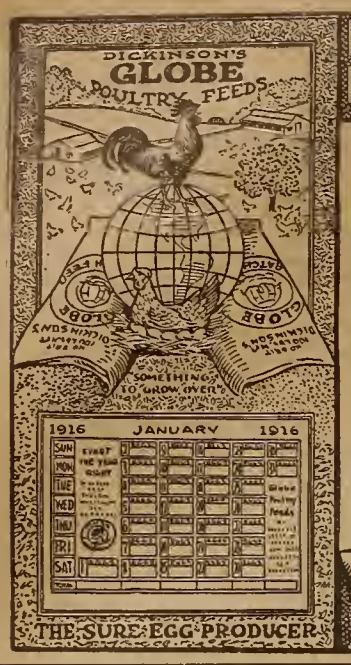
TWELVE years ago I started breeding Barred Rocks with thirty-three hens and three cockerels," H. B. Cooper, Jr., of Pennsylvania writes. "My average egg yield for the first year was 57 eggs to the hen. My poultry business has now grown to 600 breeders. The hen pictured represents twelve years of experience and hard work. She laid 253 eggs at the Third North American Contest, — 59 eggs in 59 days and 200 eggs in 238 days,—and has also won a blue ribbon for show points. I pick out my breeders according to shape requirements necessary for the work of heavy laying."



THE "Oregons" are a new poultry variety originated 6 years ago by Prof. James Dryden by crossing Barred Rocks and White Leghorns. The hen pictured descended from this cross. She laid 303 eggs in 365 days at the Oregon Experiment Station. She weighs five pounds, and began laying at six and one-half months.

SIXTEEN of the twenty-three pullets hatched with this hen made an average of 200.8 eggs in their pullet year; ten an average of 218. This hen's record, 241 eggs, was second best among 130 Barred Rocks competing in the Third Missouri Contest. She belongs to B. F. W. Thorpe of Ohio.

HERE is an English White Leghorn hen, owned by Tom Barron, that was the star performer in the Second North American Contest staged at Storrs, Connecticut. Her record was 282 eggs; and two pens of English Leghorns took three first honors.



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Globe Poultry Feeds

and we want you to be able to know just how much better these feeds make them lay. "GLOBE" Poultry Feeds are scientifically blended from pure, sweet, thoroughly cleaned grains. No screening or siftings are used. They go farther and nourish more than ordinary feeds. Try feeding your layers "GLOBE" Scratch Feed with "GLOBE" Egg Mash. Feed your young chicks "GLOBE" Chick Feed and "GLOBE" Developing Feed.

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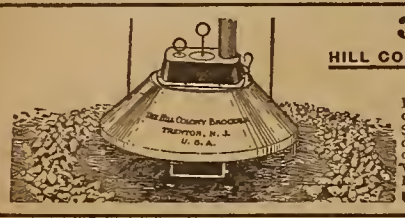

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Both fitted with top and bottom draft.

Built of heavy cast iron, fitted with magazine, never leak gas, fire never goes out, maintain an even temperature.

Satisfaction guaranteed. We will refund the money after 30 days' trial if Brooders do not do all we claim. If you wish to succeed you must have reliable brooders, otherwise success is impossible.

Write today for descriptive circular and brooder booklet with full information. Free.

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"We have been brooding 225 chicks with our Candee Colony Brooder for over three weeks, and have not lost a chick. You should see how healthy, active and vigorous they are and such vitality. The credit is due to your Brooder. We have been in the poultry business for the last 10 years but have never been so successful. The regulation of the heater is so simple that it requires no special intelligence to run it."

L. Levitt & Sons, R. D. 1, Boonton, N. J., April 20, 1915.

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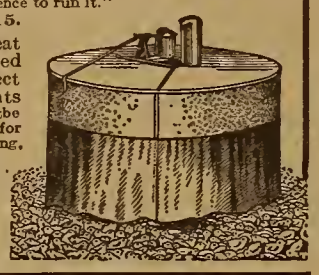
Broods up to 500 Chicks in one flock.

Why the Candee Raises the Most and Best Chicks

Burns coal and furnishes a healthy heat with no oil fumes or gases. Heat regulated automatically, giving a constant, correct temperature without attention. Curtain stops the draughts—prevents chilling of the chicks and protects the thermostat from air currents that would upset the regulation. Curtain also gives the chicks a big warm space under the hover for resting and sleeping, and a room not so warm for exercising, which makes the chicks grow big and healthy.



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Write today for large handsomely illustrated Colony Brooder Catalog that tells more about the Candee and contains many more letters like the one from Levitt & Sons from all sections.

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Make Farm Poultry-Raising Profitable $.60

GET the most out of your poultry with the least expense, that's the problem and that's what the **Peerless-66 for 1916** does. That's why A. E. B. of Canada reports 49 chicks from 51 eggs; J. H. of Ga. reports **97% Hatches**; Mrs. J. R. of Mo., 51 chicks from 53 eggs; L. F. M. of Ill., poorest hatch 46 chicks from 50 eggs. Now I have made the Peerless even better. Larger capacity—holds 70 eggs, keeps up the same good results.

The 1916 "Peerless-66"

delivered to your home for $6.60, is the only practical, all-metal, fire-proof, everlasting hatcher produced. *Heat, moisture and ventilation* are perfect. Hot water or hot air heat at the same price. The famous Sheer Heat Distributor, Sheer Wafer Thermostat. Entire top removes without disturbing lamp or regulation. Sheer Lamp automatic, safe, simple, large capacity, instantly accessible.

East of Rockies DELIVERED *Pacific Coast $7.00 Delivered*

The Peerless-66 is **guaranteed to hatch every hatchable egg.** No matter what incubator you now use, or how big or little your poultry raising, you can use this hatcher and put big profits in your pockets. IT'S THE REAL FARM INCUBATOR.

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Don't waste a whole season—your time, temper and money. Start right. Your interests and ours are identical. You want better chicks and more of them—we want you to have them. X-Ray book tells how. Send for free copy.

X-Ray Incubator

Duplex Central Heating Plant chases cold out of all the corners. X-Ray Automatic Trip keeps heat regulated exactly. *Fill the X-Ray Tank only one time—one gallon—for the entire hatch.* Hinged glass panel top permits you to see all that's going on in the hatching chamber without raising the top or even stooping. X-Ray perfectly level egg tray leaves all space available for eggs. **Fifteen big special features.** *Get free book* and see for yourself. *We pay express* to practically all points.

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X-Ray Incubator Company, Dept. 52, Des Moines, Iowa

Three Hundred Million Bushel Crop in 1915

Farmers pay for their land with one year's crop and prosperity was never so great.

Regarding Western Canada as a grain producer, a prominent business man says: "Canada's position today is sounder than ever. There is more wheat, more oats, more grain for feed, 20% more cattle than last year and more hogs. The war market in Europe needs our surplus. As for the wheat crop, it is marvelous and a monument of strength for business confidence to build upon, exceeding the most optimistic predictions."

Wheat averaged in 1915 over 25 bushels per acre
Oats averaged in 1915 over 45 bushels per acre
Barley averaged in 1915 over 40 bushels per acre

Prices are high, markets convenient, excellent land low in price either improved or otherwise, ranging from $12 to $30 per acre. Free homestead lands are plentiful and not far from railway lines and convenient to good schools and churches. The climate is healthful.

There is no war tax on land, nor is there any conscription. For complete information as to best locations for settlement, reduced railroad rates and descriptive illustrated pamphlet, address

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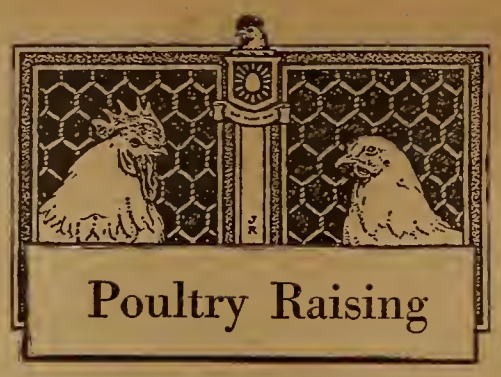
Canadian Government Agent.



Egg Shape Tells Story

HAVE you noticed that the best layers as a rule produce better and more uniform-shaped eggs than poor layers? The hen that has a laying cycle of, say, two days in succession, then skips a day, repeating her schedule quite regularly for weeks or months at a time, nearly always lays an egg of fair size and regular shape. This rule is also generally true of hens having a higher speed egg cycle—say, laying three, four or five days in succession, with a skip of only one day, and continuing the schedule with only slight variation.

On the other hand, the poor and irregular layers are less apt to have a regular cycle. They lay eggs quite different in shape and size. Often, too, there will be irregularities in the shell formation.

The egg machinery of the poor layer works at different speeds, and frequently loafs on its job, thus causing the variations in the shape and size of the egg.

The drawings here shown were made from photographs of eggs laid by heavy-laying and poor-laying hens in one of the Missouri egg-laying contests. The eggs composing the upper row in each photo-

graph were laid by high-producing hens, the lower rows by medium and poor layers.

Hens that loaf through the winter, and make a heavy-laying spurt for two or three months in the spring, generally lay unusually large eggs. The tendency of the average person is to select these large eggs for hatching when no breeding pens are kept separately. The result is to reproduce the poorest laying stock. This plan of selecting eggs for hatching is no doubt greatly responsible for the poor-laying stock found on many farms.

Ventilating for Poultry

Please advise me as to ventilation of my poultry house, and how many hens I should keep in it. It is 7 feet high on one side, 5 feet on the other and 9 feet 8 inches wide, with a shed roof, and is 20 feet long, made of matched pine.

E. H. K., Michigan.

WE THINK that 25 hens are all that should be kept in this house, but if the feeding and watering equipment is placed on raised platforms, so that the birds may occupy all the floor, 30 hens may do well. The greatest care must be exercised to keep the floor and litter from getting foul or ill-smelling, and to keep it well ventilated. These things are more difficult as the number of occupants of the house is increased. The roosting-room window should be opened at night with muslin over it to prevent draft, and the door between the roosting-room and the scratching-room should be kept partly open at night, except in the coldest weather, unless the opening should produce a draft. If the house is perfectly tight, with the exception of the window, there should be no draft. The owner can get a good idea of the comfort of the birds by spending a little time in their sleeping-room and adjusting the window so as to avoid any draft. Plenty of air should be admitted to the scratching-room in the day time by opening one or more windows, using muslin-covered frames in stormy weather.

Ma... Yo... Opportunities with Poultry

High market prices for poultry and eggs—big grain crops producing cheap poultry foods—plentiful money and busy factories everywhere—all make big opportunities for poultry raisers. Now is the time to start with

Cyphers-Built Incubators

Low in cost—sure in results—three styles—eight sizes. Also complete line of Hovers, Brooders. Write today and start hatches early.

Big Catalog FREE—Write Today

168 pages showing 100 different articles for poultry men. Also ask for book "Poultry Foods and Feeding."

Cyphers Incubator Co.
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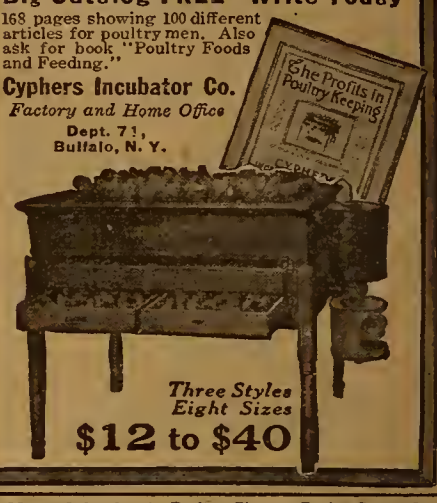
Dept. 71, Buffalo, N. Y.



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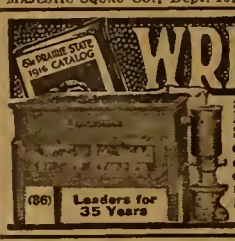

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Potter Redybilt Poultry Houses You can buy Portable Houses, Coops and Roosting and Nesting Equipment cheaper than you can build. Easy to set up and take down.

Complete Hennery Outfits (roosts, nests, etc.) $3 up. Makes it easy and inexpensive to start in the chicken business. Send 4c stamps for 100-page book. POTTER & CO., 65 Forest Avenue., Downers Grove, Ill.

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Strong, rigid, simple; stand years of hard service. Frames of heavy bar steel, or hardwood braced and bolted. Non-heating, self-adjusting boxes. 10 styles. The Appleton

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has made good for 30 years. Strong, durable. Coarse or fine grinding—ear corn or small grain. Ball bearing, ring oiler, light running.

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of Appleton Quality deliver more h. p. with least use of fuel; and wear for years. Sizes, 1½ to 22 h. p. Wood-Saw, Grinder and Engine catalogs free; write for ones you want.

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By teaching you the methods of the world renowned Prof. A. A. BRIGHAM, formerly principal S. D. Agricultural College. How to build up a profitable poultry business—how to raise, feed, house, exhibit, manage, above all how to profitably market and advertise to get big prices for your stock and eggs. Everybody can profit by it. We'll show you the way to real results. Full particulars sent FREE. Write today.

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Earth doesn't clog or stick in the Standard Earth Auger. Digs wells, post-holes or holes for any purpose.

STANDARD WELL BORING OUTFIT

Digs a 40 ft. well in one day. Will go as deep as 100 ft. Pure sparkling water all the year around from a "Standard Outfit" well.

Make $20 a day boring wells for your neighbors. Our illustrated booklet tells you all about it. Enclose 2c stamp to cover postage. Write NOW.

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Built for the Future

A Schwalge Incubator never wears out. It hatches the highest possible percentage of fertile eggs year after year under all conditions. It is absolutely self-regulating. Has original Moisture and Ventilating Systems supplying fresh, warm, damp air to the egg chamber. Double wafer thermostat keeps temperature uniform.

Schwalge Sectional Incubator

grows as your hatching requirements increase. Start with one section—a complete incubator; add other sections up to ten and you have a mammoth incubator; ALL sections heated by one lamp. It's a great new idea. Catalog FREE.

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Elmhurst, Ill.

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Send for 1916 announcement showing Atco Autos in various makes and models including Roadsters, Touring Cars, Trucks and "Jitney" Busses, at prices representing a fraction of their original cost. All sold on Easy Payment Terms. $50.00 now will secure any car for future delivery. Any one may also be purchased at from five to eight dollars per week. We ship everywhere to anyone. Atco Autos Guaranteed for One Year. Prices from $275.00 to $785.00.

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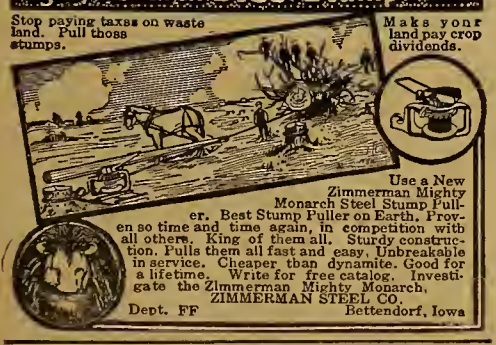
Pull 200 To 600 Stumps Per Day With Zimmerman Mighty Monarch Steel Stump Puller



Stop paying taxes on waste land. Pull those stumps. Make your land pay crop dividends.

Use a New Zimmerman Mighty Monarch Steel Stump Puller. Best Stump Puller on Earth. Proven so time and time again, in competition with all others. King of them all. Sturdy construction. Pulls them all fast and easy. Unbreakable in service. Cheaper than dynamite. Good for a lifetime. Write for free catalog. Investigate the Zimmerman Mighty Monarch.

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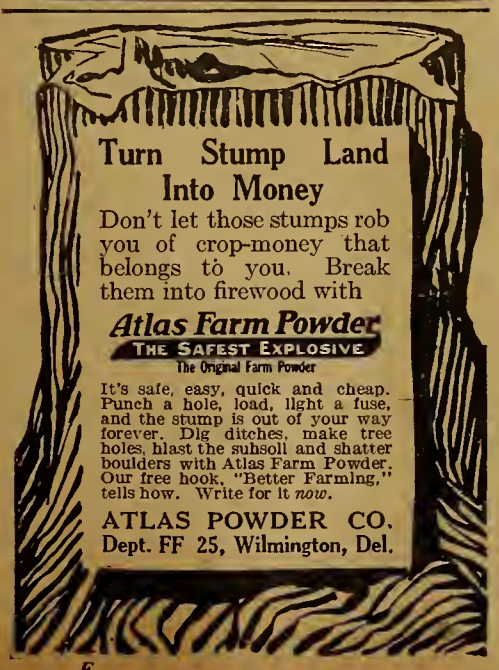

Turn Stump Land Into Money

Don't let those stumps rob you of crop-money that belongs to you. Break them into firewood with

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THE SAFEST EXPLOSIVE
The Original Farm Powder

It's safe, easy, quick and cheap. Punch a hole, load, light a fuse, and the stump is out of your way forever. Dig ditches, make tree holes, blast the subsoil and shatter boulders with Atlas Farm Powder. Our free book, "Better Farming," tells how. Write for it *now*.

ATLAS POWDER CO.
Dept. FF 25, Wilmington, Del.

Building Notes

Safe Building Figures

By B. D. Stockwell

Foundations

Thickness of concrete foundation walls, 8 inches or more.

Height above ground, 18 inches or more.

Depth below ground—below frost line and resting on concrete footing 6 inches deep and 12 inches wide.

Size of Barns

Oblong barns usually cost less than square barns of same capacity, because they require fewer heavy timbers to make the span between the walls.

A barn 34x40 feet will house 20 cows.

One 32x100 feet will house 50 cows.

One 34x130 feet will house 66 cows.

And one 36x175 feet will house 80 cows.

A round barn, 32 feet in diameter, will house 32 cows.

Floors and Gutters

Concrete floors over solid clay or tamped gravel, 4 inches thick.

Concrete floors over sandy or yielding surface, 6 or more inches thick.

Pitch of gutters back of live stock, 1 to 2 inches for 50 feet.

Width of gutters, 14 inches; depth, 3 to 6 inches.

Stalls and Stanchions

Stalls for dairy cattle, 3 feet to 3 feet 8 inches wide.

Leugth from stanchion to edge of gutter, 4 feet to 4 feet 6 inches. Large cows may require more.

Stalls for horses, 5 feet to 5 feet 4 inches wide; 8 feet 6 inches for double stalls.

Length about 9 feet for average-sized horse.

Neck space between uprights in stanchions, 6¾ inches for cow; 5¾ inches for yearling; 4¾ inches for calf.

Box stalls for hospital or maternity use, 8x10 feet to 12x12 feet.

Mangers and Feeding Alleys

Dairy-cow mangers, 2 feet to 3 feet 4 inches wide.

Feeding alleys at least 3 feet wide.

Litter carriers require 4-foot radius or more for making turns easily.

Silos

A silo 10x32 feet will hold about 50 tous of corn silage.

One 12x24 feet will also hold about 50 tons.

One 14x32 feet will hold about 100 tons.

One 12x40 feet will also hold about 100 tons.

One 16x42 feet will hold 200 tons.

One 18x36 feet will also hold about 200 tons.

The diameter of a silo should never be greater than one half the height; about one third the height is a better proportion when silage is fed slowly.

Gates and Fences

Hog fence, 36 inches high, or more.

General field fence, 48 to 50 iuches high.

Fence for cattle and horses, 56 to 60 iuches.

Poultry fence, about 60 inches or more, dependiug ou breed.

Farm gates for wagons, 10 to 12 feet wide.

Gates for fields requiring binders and other large implemeuts, 12 to 14 feet.

Gates for foot paths, 3 to 4 feet.

Stable doors for horses and cattle, 4 feet wide; 7 feet high, or more.

Double doors for driveways, 8 to 9 feet high; 10 feet wide.

Guttering and Spouting

A 4-inch trough of average length requires 2-inch conductor pipe.

A 5-inch trough requires 3-inch pipe, and a 6-inch trough a 4-iuch pipe.

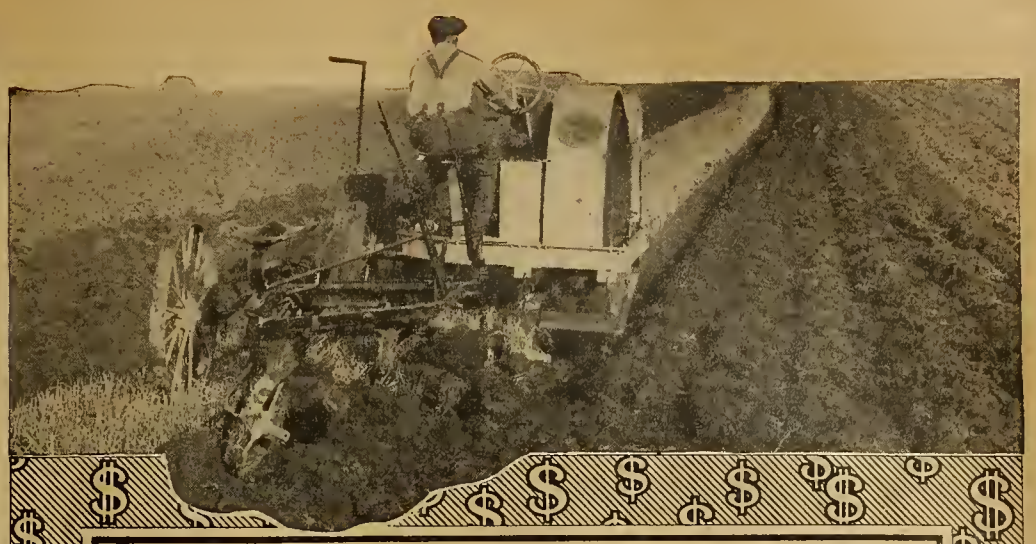
Water and Waste Pipes

Water pipes for drinking trough, ¾ inch (inside diameter).

Waste pipes from sinks and tanks, 1½ inches.

Soil pipes, usually 4 inches.

Doubling the diameter of a pipe increases its capacity four times.



Get This! 8000 Bull Tractors Sold in 20 Months—

one every 30 minutes of each working day. (956 sold in December, 1915, alone.) That tells the story of its merits.

"One of its best features," writes Mr. Matt Olson, Kensett, Iowa, "is the single bull wheel running in the furrow. With its long 'space' lugs (which loosen the subsoil 3½ to 5 inches deep) it gives me the advantage of a subsoiling attachment." "Does the subsoiling better and at less cost," writes Mr. O. A. Hylden, St. Ansgar, Iowa.

Our Guaranty and Service insure you long, efficient service at small cost. Price f. o. b. Minneapolis, $645

Our Service Department is brought close to your farm, and loss of time in shipment is avoided by Bull Tractor Distributors in every implement trade center.

To get a "Big Bull" this Spring, you'll have to act quick. Write for full details of Big Bull features and our FREE Monthly Tractor Bulletin.

Bull Tractor Company
2686 University Ave., S. E.
Minneapolis, Minn.

THE BULL TRACTOR MINNEAPOLIS, U.S.A. THE BULL WITH THE PULL THE BULL TRACTOR MINNEAPOLIS, U.S.A.

GET MY INCUBATOR OFFER

In business 17 years I have produced a wizard hatching machine, wonderful for its mechanical precision. Big production makes low prices. Simple and reliable, gets big hatches. Write today for my 1916 SPECIAL OFFER in DETROIT Incubators and Brooders. Send Now. (2)

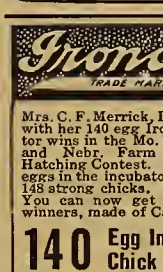
HOMER L. SMITH, Pres.
Detroit Incubator Co., 475 Campbell Ave., Detroit, Mich.

Ironclad TRADE MARK

Mrs. C. F. Merrick, Lockney, Tex., with her 140 egg Ironclad Incubator wins in the Mo. Valley Farmer and Nebr. Farm Journal Big Hatching Contest. She placed 148 eggs in the incubator and hatched 148 strong chicks. Think of that. You can now get these famous winners, made of Calif. Redwood.

WINS In 2 Biggest HATCHING CONTESTS Ever Held

140 Egg Incubator / Chick Brooder BOTH FOR $10 Freight Paid East of Rockies



Made of Redwood covered with galvanized iron.

If ordered together. 30 days' trial. 10-year Guarantee. Order direct from this advertisement—money back if not satisfactory. Incubator is covered with galvanized iron, triple walls, copper tank, nursery egg tester. Set up ready to run. The Brooder is roomy and well made. Send for free catalogue.

140 Chick Brooder

Ironclad Incubator Co.
Box 97, Racine, Wis. (3)

25 TIMES World's Champion Belle City Incubators and Brooders

"Tycos" Cup

"In 25 World's Greatest Matches Belle City Won With Perfect Hatches"

402,000 in use. Get the whole wonderful story told by the championship winners themselves in my big

Free Book, "Hatching Facts"
On Practical Poultry Raising

With book comes full description and illustration of my incubator and brooder in actual colors—the kind used by U. S. Government and leading Agricultural Colleges—

My Ten-Year Money-Back Guaranty
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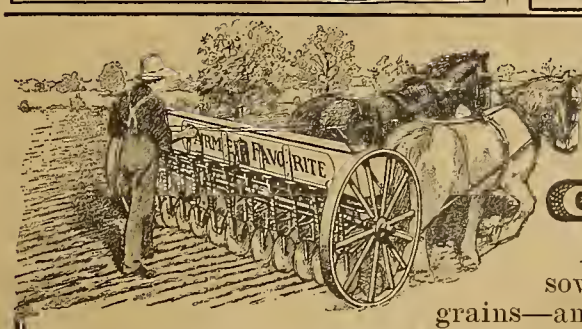
Same As Last Year

All facts, proofs, particulars—100 photographs of prize-winning hatches—

Also my $1300.00 Gold Offers

Conditions easy to receive biggest pay. Learn how I paid one Belle City user $156.25; another $50, many from $45 down. Write me today. Jim Rohan, Pres.

Belle City Incubator Co., Box 100, Racine, Wis.



Farmers' Favorite GRAIN DRILLS

Are noted for the accurate sowing of all large and small grains—anything from wheat to bush lima beans. Even depth of planting and an equal amount of seed in every furrow is assured. They have been continuously on the market for more than 50 years and are used by the best farmers in every grain growing country in the world.

There is Made a Farmers' Favorite Grain Drill for Every Need

Investigate the merits of the Farmers' Favorite Plowfur Single Disc; opens an extra wide seed furrow; scatters the seed evenly the entire width; more plauts to the row; a better stand and fewer weeds.

Farmers' Favorite Drills are made in every style and size—in plain grain and combiued grain and fertilizer—from One Horse up.

Send for the Farmers' Favorite Catalogue. Read it and then go to your local implement dealer and insist on seeing the Farmers' Favorite Drill. Remember that this drill is sold under the strongest possible warranty and must be and do ALL we claim.

The American Seeding-Machine Co., Inc., Springfield, O.

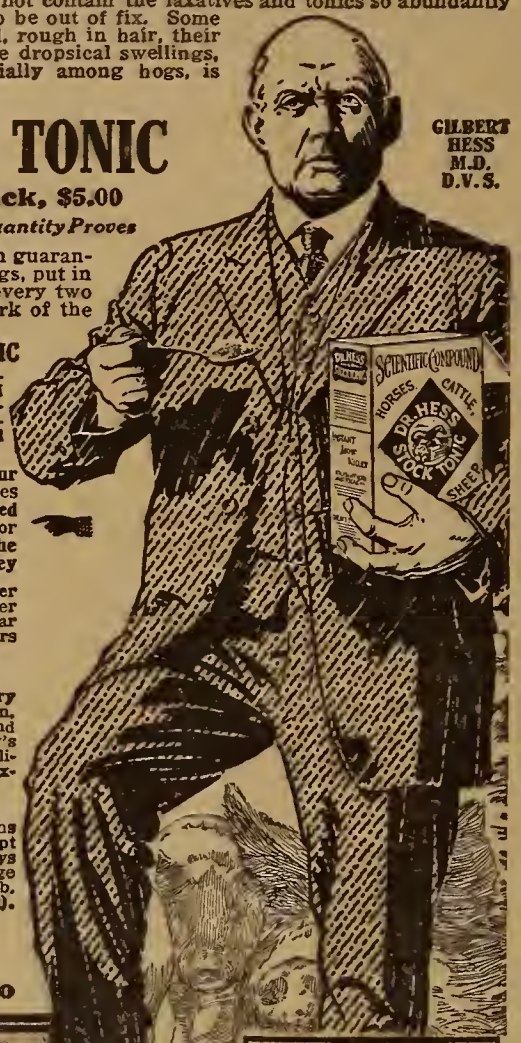
I'LL PUT YOUR STOCK

in a thriving condition, make the ailing ones healthy and expel the worms.

Remember, I have no peddler's wagon and horses expenses to pay; that's why I can sell you my Stock Tonic through a local dealer in your town—a man with whom you trade every week—at rock-bottom prices.

Why Pay the Peddler Twice My Price?

I urge every farmer to see to it right now that his work horses are put in condition for the hard work of spring and summer, so that when the sun shines your horses will be rid of their old coats, full of stamina and ready for business. And don't overlook the spring pig crop—the mortgage lifters. Start them off free from disease—free from worms. Be sure, also, that your milk cows are thoroughly conditioned for the long, heavy milking season, and that those with calf are vigorous and fit. Remember, your stock have been cooped up for the last few months and have been on dry feed. As corn or oats, hay and fodder do not contain the laxatives and tonics so abundantly supplied in grass, your stock are pretty apt to be out of fix. Some of your animals are liable to be constipated, rough in hair, their legs may have become stocked, or they have dropsical swellings, but the most common disease of all, especially among hogs, is worms—worms.



GILBERT HESS M.D. D.V.S.

DR. HESS STOCK TONIC

25-lb. Pail, $1.60. 100-lb. Sack, $5.00

Highly Concentrated, as the Small Dose Quantity Proves

Now, as a worm expeller, I will go the limit in guaranteeing my Stock Tonic. To clean out your hogs, put in the swill one tablespoonful of my Tonic to every two hogs twice a day and you'll make short work of the worms. Dr. Hess Stock Tonic is

A Sure Worm Expeller—A SPLENDID TONIC

This preparation of mine is 24 years old, farmers everywhere have tested it. I feed it to my own stock, for I know that it contains the necessary ingredients for enriching the blood, improving the digestion and assimilation, keeping the entire animal system clean and well regulated.

So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel the worms, that I have authorized my dealer in your town to supply you with enough for your stock, and if it does not do as I claim, return the empty packages and my dealer will refund your money

And here are my prices—just half what the peddler charges: 25-lb. pail, $1.60; 100-lb. sack, $5.00. Smaller packages as low as 50c (except in Canada and the far West and the South). Sold only by dependable dealers who are known for square dealing.

Dr. Hess Poultry Pan-a-ce-a

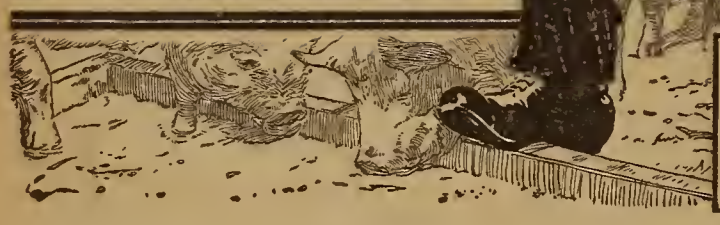
This is just the time you should be giving your poultry this splendid tonic. It will put them in fine condition, make your hens lay, ensure fertile hatching eggs and strong, vigorous chicks. Very economical—a penny's worth is enough for 30 fowl per day. Sold only by reliable dealers—1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail, $2.50 (except in Canada and the far West). Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc. Comes in handy, sifting-top cans. 1 lb. 25c; 3 lbs. 60c (except in Canada and the far West). I guarantee it.

I have a book about Dr. Hess Stock Tonic that you may have for the asking.

DR. HESS & CLARK, Ashland, Ohio



If you have a sick or injured animal, write me at once, giving symptoms, and I will send you prescription and letter of advice free of charge. Send 2c stamp for reply.

Yes, Get a NEW IDEA if You Have to Mortgage Your Farm

Registered U.S.Pat.Off.

If your roof leaked would you say "I can't afford to fix it" and let the rain go on damaging your home? Not by a jugful! You'd fix that roof if you had to borrow the money.

Your farm without a spreader leaks profits. All the manure doesn't reach the land and what does go isn't properly spread. It misses some spots and in others is too thick. A farm with 20 head of cattle and horses loses enough manure value yearly to buy a spreader.

Make your farm pay its real profit. Stop the waste of manure by the fork-and-wagon method. Make money with the **NEW IDEA**, the spreader with so many special features that it's the acknowledged leader. You can load it as high as a wagon box and spread 3, 6, 9, 12, 15, 18 loads per acre without fear of clogging.

The New Idea pulverizes finely and spreads more evenly than you could possibly do with a fork. The double cylinders take care of that. Our revolving distributor, a patented feature, spreads the manure seven feet wide, across three corn rows. It spreads beyond the wagon tracks and you don't have to drive over spread manure.

No Gears to Strip, Break or Freeze

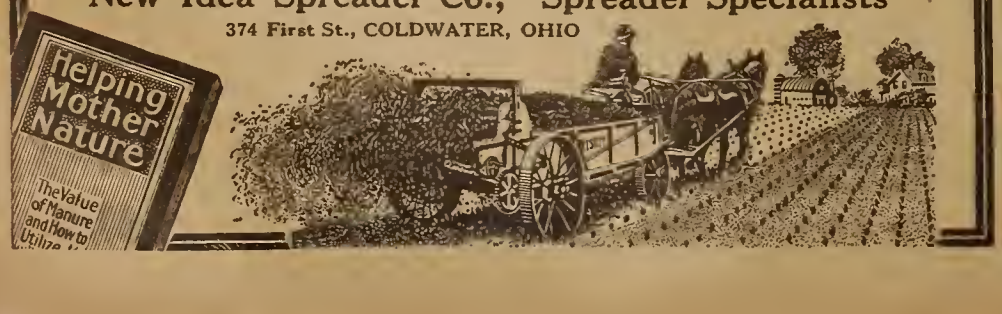
Another proof of New Idea superiority. This spreader is operated by a heavy sprocket chain. This saves power and is easier on the horses. Special axle feed. Strong chain conveyor running over tight bottom brings every bit of manure to the cylinders. Can't slip and won't race going up hill. Wheels track, making easy going.

Write for Free Book

"Helping Mother Nature," a special book on manuring sent free on request. Worth money but we give it free. Ask your dealer for a copy and demonstration of spreader or write us direct.

New Idea Spreader Co., "Spreader Specialists"

374 First St., COLDWATER, OHIO



Live Stock—Dairy

"Shut the Gate!"

By H. A. Bereman

DID you ever leave the barnyard gate open after you had fed the hogs? You were going right back in a minute, but the telephone rang just as you reached the house, and then Neighbor Jones stopped on his way home from town to say that the Bates House had burned—and you forgot all about that gate. After the pigs had played hob with the flower beds in the front yard and upset the slop pail on the back porch, they wandered down the road about two miles and you spent half a day hunting and chasing them home. What! never?

Well, there was that time you left the granary door ajar and the bay gelding found it before morning and foundered on too much corn. No? Never lost a critter that way? Must have been someone else.

Surely you remember that Sunday you motored over to Cousin Jim's and didn't get back till nearly midnight. Somebody left the bars down that lead into the sorghum patch back of the barn and you lost five of the best cows who liked second-growth sorghum but didn't know it was loaded. Not guilty? Well, well, you sure are some grand little remembrancer.

Never in your whole life forgot to shut a door, or a gate, or a feed-bin cover! Please step up to the platform while the Efficiency Expert hangs a memory medal on you. You can get into any museum of natural wouders on the strength of it.

But if you are like most of us plain, human farmers, you have had to grin and bear your share of losses from carelessness or oversight.

Or perhaps you make a practice of going the rounds every night with a lantern to see that all is well. That's not a bad idea either. Fifteen minutes given to a bedtime inspection of the animals and their quarters may save you fifteen weeks of regret.

But the Hon. Efficiency Expert says that fifteen minutes a day spent in putting the live stock to bed amounts to nine working days in a year. My, my, how the littles do count up!

What is the answer? Just this: If you will make it a rule never to leave a gate or door open, or the lid of the feed box up, thinking you will be back in two seconds to shut it, you will "get the habit," and that will help some. "Do it now" is a watchdog that frightens away that thief of time, "Procrastination."

Then here is another idea: How would it do to fix every hinged gate, door, and cover that may lead to trouble, so that it will shut itself automatically? Then you won't have to hike out on cold nights or wake yourself up after getting nice and snoozy in the big chair; nor will you have to wake up about 11 P. M. wondering and worrying whether you forgot anything, and whether the pigs are in the garden, or the chickens are roosting on the steering wheel, or the horses have got loose and have their heads in the feed barrel, or the calves straying down the pike.

Swing the small gates shut with a paint bucket full of scrap iron hung on a chain. Fix the danger doors with a strong spring that will pull them shut with a snap and a bang that registers in your subconscious mind the comforting fact of safety first, last, and all the time. Fix feed-bin lids so they can't stay open when you leave them. Hang warnings on all other gates to "Shut the Gate!"

If you haven't had gate troubles, it is no sign you won't. Better be safe than sorry. Take a precaution to-day and cut out the worrying and the risk.

This isn't written by a sentimental theorist who doesn't know what he is talking about. It is straight from the heart of a "shirt-sleeves" farmer.

Clover-Bloat Remedy

CLOVER BLOAT, according to two Kentucky experts who have made a study of it, is caused by the fermentation of sugar in the blossoms. White and red clover blossoms, also alfalfa blossoms, contain from about 2.5 to 3.5 per cent of sugar. In clover leaves and in blue-grass blossoms the sugar is less than one per cent. This explains why clover and alfalfa fields in blossom may cause bloat so easily.

The remedy is to drench the bloated animal with one quart of a 1½-per-cent solution of formalin. Follow this by placing a wooden block in the animal's mouth, and exercise moderately if it can walk. Formalin is a 40-per-cent solution of formaldehyde gas in water, and costs about 40 cents a pint, full strength. Use half an ounce of this strength to a quart of water for drenching purposes. The drench stops fermentation, and there are said to be no bad after-effects.

Rye and Rape for Hogs

WEST VIRGINIA reports a suggestive experience of Mr. Bloch in the northern Panhandle. He devoted six acres to rye and rape as forage crops for hogs—two in rape and four in rye. Two acres of rye were allowed to ripen, and the hogs harvested it. When it was pretty well hogged off, a cutaway disk was used to renew the tilth and bury the remaining grain to reseed the ground. Sixteen hogs were pastured on the six acres during the summer, and made gains aggregating about 1,000 pounds.

Horses and Safety First

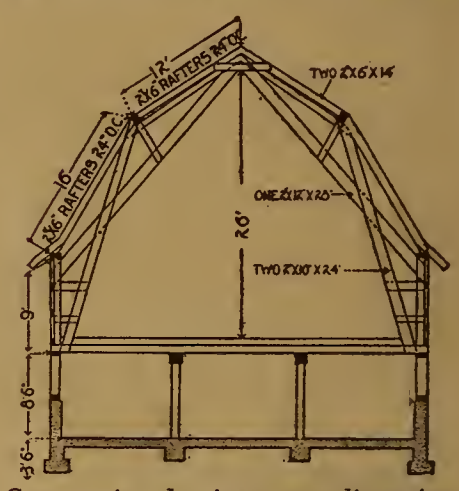
FROM 200,000 automobiles in 1909 to 2,000,000 in 1915 is the growth of the motor-car industry. But in proportion to the number of cars in use there were less than half as many accidents last year as in 1909. Census and automobile authorities attribute the reduction of the accident rate to more careful driving.

Let's give old Barney some of the credit too. He doesn't bat an eye when a touring car blows exhaust in his face. A horse that is not auto-broke is now the exception.

Plank-Frame Barn

By W. E. Frudden

RISING land values have meant better barns and more of them. But building materials are high in price nowadays, and so is carpenter labor. Every stick of timber that goes into the building must be put there for a definite purpose. When our grandfathers built barns they did not have to bother about high-priced ma-



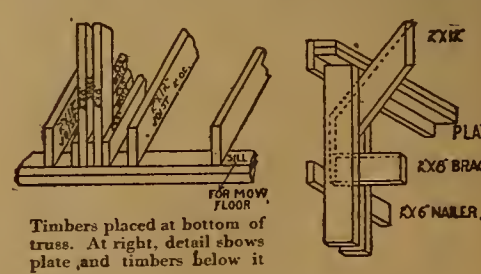
Cross-section showing proper dimensions for barn 36 feet wide

terials and labor. In one barn they would put enough material to build two barns like the one described here.

This is the well-known barn truss called by many the Wisconsin type, while others give it the name Shawver truss. It is safe, durable, economical, easy to build, and worth building. These statements have been proved in hundreds of cases throughout the Middle Western States.

The heaviest timber is two inches thick. Plank-frame barns like this one are raised with a small crew of men. Barn-raising celebrations are out of date now. The truss system that is here shown is spaced every 14 feet in the length of the barn. For a 56-foot barn five trusses will be needed. Build them up on the ground or on the haymow floor, one ou top of the other, and when all are completed they are hoisted into position with a gin pole and block and tackle.

Staging is daugerous, and it is not needed in the building of this type of farm barns. When the purlin plate has been pulled up into its position at the



Timbers placed at bottom of truss. At right, detail shows plate and timbers below it

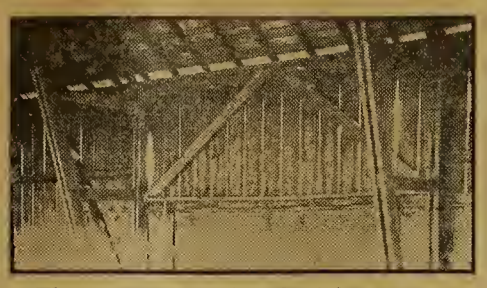
break in the roof, the rafters and the nailing girts for the siding are spiked to the truss timbers, which are spaced every 14 feet or so. The barn can then be sided and shingled in the ordinary manner, using sheet metal, cedar shiugles, or prepared roofing.

In timber-frame barns there is a waste of material, and also of labor. Here

E

there is a place for every scrap of lumber a foot long, and the lumber that is used is much cheaper than the big heavy timbers.

There are no cross-beams in a barn that is built after this plan. The haymow is open all the way. The truss was designed, however, safely to take care of every pressure from the wind, snow, or weight of hay.



The trusses are placed 15 feet apart; 2x12's are the heaviest timbers used

A plank-frame barn like this one is a possibility for every corn-belt farm. The materials needed are to be found in any good lumber yard.

The landowner who is figuring on a new barn for his farm will be well repaid for his time if he will take a look at a barn of the type here described, and note for himself some of the many worthwhile features.

Telling Age of Sheep

BUYING mature sheep is a good deal of a gamble to the inexperienced, would-be flock owner. An old sheep may look well but only last for a year or two of profitable service. After a sheep is over four years old the teeth do not show much change except where they drop out as old age draws near. Briefly stated, a sheep with one pair of permanent teeth is a yearling; two pairs, a two-year-old; three pairs, a three-year-old, and four pairs, a four-year-old.

Belgian Hares in Brief

BELGIAN hares became an established breed about 1840 in Belgium, were further developed in England, and importations to the United States began about 1890.

Shortly after that a boom started, their merits were overclaimed, and the entire business received a serious setback.

Belgian hares are raised for show purposes, for meat, and for pelts. At the age of about three months Belgian hares are very tender, juicy, and delicate in flavor.

They weigh over a pound for about every month of age up to six months, and are usually killed between the ages of two and one-half and five months.

The meat has no general market price, and markets must therefore be developed locally.

Belgian hares, dressed, sell for from 15 to 30 cents per pound, depending on size, quality, and market condition.

Litters usually contain from six to twelve, and the does will breed four times a year.

If all the progeny from an average pair of Belgian hares lived and were

A pure-bred Belgian hare. This full-grown buck weighs about eight pounds

mated, there would be about 136 animals at the end of a year, and 1,000 pounds of meat when the hares were fully grown.

The common ways of killing them are by dislocating the neck and by striking them on the back of the head.

Great Britain is a rabbit-eating country, and about 12,000 tons of rabbit meat are imported annually, mostly from Australia and New Zealand.

Belgian hares will eat the common vegetables, grains, hay, and milk. They need to be fed twice a day, except that young hares and brood does should be fed three times a day. Unlike chickens, Belgian hares may be fed after dark.

They can stand very cold weather, but not dampness nor drafts.

The pelts of Belgian hares are tough and can be tanned, but the market value is small unless the hares are over a year old and have heavy, thick pelts.

Pure-bred Belgian hares are a tawny, rusty red on the back and a light cream color under the belly. The end of the fur is tipped with black, and the edge of the ears has a jet-black lacing.

Caponizing young male Belgian hares at ten weeks of age produces animals about 50 per cent heavier than ordinary Belgian hares.

The popular ways of cooking hares are fried, roast, stewed, fricasséed, or in about in the same ways as chickens.

Pure-bred hares for breeding stock ordinarily sell from $2 upward, and hundreds of dollars have been paid for very fine specimens.

Amateur breeders sell them for meat, for pets and, at Easter time, as window attractions for drug stores and shops selling dyes.

Belgian hares thrive best when kept in enclosed hutches or small yards.

A mature hare needs a hutch about two feet high and having twelve square feet of floor space.

Among the principal diseases are snuffles, slobbers, and pot-belly.

Snuffles is the result of drafts, overfeeding, or dirty quarters.

Slobbers is a disease of young rabbits resulting from eating hay or coarse feed.

Pot-belly is caused by too much bulky feed, especially green feed and lack of exercise.

Are they prolific? This is a medium-sized litter and the basket is half full

Belgian hares are seldom troubled with mites or insects.

Farmers' Bulletin No. 496, entitled "Raising Belgian Hares and Other Rabbits," is an instructive pamplet for amateur hare breeders.

WISCONSIN has 50,000 silos—more, it is claimed, than any other State.

A WISCONSIN test of milk-bottle-washing machinery shows that hand washing breaks nearly four times as many as machine washing. Where 500 bottles a day are washed the saving, according to this test, would be $120 a year, "which represents a good return on the investment."

Sires Producing Cows

A DOZEN daughters of a noted Holstein bull have now made more than thirty pounds of butter in seven days. This bull is owned by a Geauga County, Ohio, stock farm.

There is no other bull of any breed in the world that has so many 30-pound daughters. Such a bull is valuable beyond price.

Then why should we not similarly labor to breed cock birds that will be the sires of scores of 200-egg hens?

Why Call it Buttermilk?

HERE is a formula for making artificial buttermilk, as recommended by a dairy supply house. Heat 40 quarts of water to 80° C., add 9 pounds of skim-milk powder, and stir until dissolved. Pasteurize, cool, add commercial buttermilk culture, and ripen.

Sometimes artificial buttermilk is made from skim milk, and the rules say, "In case a more liquid buttermilk is desired, add from 10 to 25 per cent good well water." But why call it buttermilk?

Produces 900 Pounds

THE dual-purpose cow has been the subject of some warm debates. Most of the skeptics end their arguments by saying, "Let's see some of those theoretical animals that look like beef cows and give as much milk as the dairy breeds."

You are now looking at Jean Duluth Beauty, a Red Poll cow. She finished her record January 11th, producing over 20,000 pounds of milk and close to 900 pounds of butterfat. When you consider that only a few years ago the world's record dairy cows were in the 900-pound class, this is doing first rate for a dual-purpose beginner.

Your Lame Blemished Horses Need Attention Now

Don't delay—it's easier and cheaper to treat blemishes before they become deep-seated. A few applications of ABSORBINE well rubbed in acts quickly and effectively without blistering or laying up the horse. ABSORBINE is concentrated—handy and economical to use. A few drops is all that is required at an application.

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

THE ANTISEPTIC LINIMENT

is used by successful trainers, breeders and horse owners the world over—it has increased the working and selling value of thousands of horses—it has helped many horses to break records on the track and, incidentally, has made money for its users. ABSORBINE itself has a record of twenty-five years' service in producing successful results.

WHAT USERS SAY

Mr. Chas. Lawrence, Paoli, Pa.: "I have successfully used your Absorbine on a big knee of six months' standing. It certainly is the most remarkable liniment I ever used."

Mr. R. J. Crabtree, Maroa, Ill.: "I have never used anything equal to Absorbine for thoroughpin. I removed one of a year's standing. I would not be without it, and have recommended it to my neighbors and friends."

USE ABSORBINE

to reduce sprains, bog spavins, thoroughpins, puffs, shoe boils, capped hocks, swollen glands, thickened tissues, rheumatic deposits, enlarged veins, painful swellings, strained, ruptured tendons, ligaments or muscles; to allay pain and stop lameness; to strengthen any part that needs it.

ABSORBINE $2.00 a Bottle
at druggists or postpaid
upon receipt of price

W. F. YOUNG, P.D.F.
23 TEMPLE ST. SPRINGFIELD, MASS.

DE LAVAL

O.K'd by nearly two million cow owners

MORE De Lavals are being sold than all other makes combined—nearly 2,000,000 are now in use. Year by year an ever increasing proportion of farm separator buyers reach the conclusion that the De Laval is the only cream separator they can afford to buy or use.

In fact, about the only excuse ever offered for buying any other separator nowadays is that its first cost is a little less than the De Lavals.

But they soon find out that the last cost of a cream separator is what really counts, and when they realize that the De Laval gives the most and best service for the money they buy a De Laval.

Over 40,000 users of inferior machines discarded them for De Lavals during the past year in the United States and Canada alone.

Better be right in the first place and start with a De Laval.

THE DE LAVAL SEPARATOR CO.
165 Broadway, New York 29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

7 WONDER COWS of The World 7

And How They Made THEIR ASTONISHING RECORDS

You no doubt have heard of these seven *"Wonder Cows."* You may know them by name and by record. But, do you know how they made their astonishing records?

Everyone of these seven World's Champions was fed SCHUMACHER FEED as the base of the ration during its record-making, record-breaking official test.

In each instance SCHUMACHER FEED was a necessary part of the daily food. The owners of these cows of different breeds—at different farms and different times, were all in accord in selecting SCHUMACHER FEED as a part of the rations to be fed at these important tests. These men know feeds as well as breeds. They also know that the best feed must be fed to get the best results in the pail. It is also a significant fact that back of almost every World's Record of recent years stands SCHUMACHER FEED as the "unseen power" which supplies the energy, stamina and continued health, so necessary to any cow which undergoes the strain of long continued milk production.

Mr. Dairyman, you may not be trying for World's records, but you surely are anxious to get bigger yields, stronger constitutions, "every-day-on-the-job" health conditions, stronger calves, etc. If SCHUMACHER FEED will help do this and make World's Champions, it will help your cows to do better and make better records for you. It has proved BEST for the BEST cows in the world—it will prove BEST FOR YOURS.

SCHUMACHER FEED

The Record-Making, Record-Breaking Feed of the World's Champions

SCHUMACHER FEED is a "wonder feed"—the most palatable feed obtainable. If fed as suggested below, in addition to producing bigger yields, you will see "better conditions," brighter eyes, more vigor and life, less sickness, fewer "off-feed" conditions, because of its varied and ideally balanced food elements. It is composed of kiln-dried, finely ground products of corn, oats, wheat and barley, scientifically blended and balanced to meet the exacting requirements of the dairy cow to best advantage. When fed on the following plan, it has no equal:

This Feeding Plan Will Surprise You

Feed as the grain part of the ration, three sacks of SCHUMACHER FEED to one sack of gluten, oil meal, linseed meal, dried brewers' grains, dried distillers' grain, Malt Sprouts, Blue Ribbon Dairy Feed or any other high protein mixture. When cottonseed meal is used, feed four to five sacks of SCHUMACHER FEED to one of cottonseed meal.

As a suggestion of the amount to feed each cow, give one pound of the above mixture with all the roughage and ensilage the animal will consume, to every three or four pounds of milk that the animal yields.

Also Good For Horses, Hogs and Calves

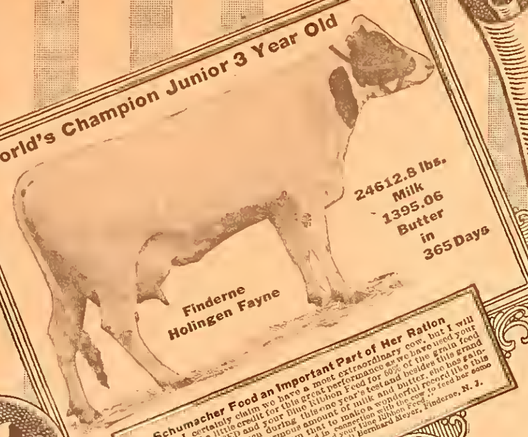
Because SCHUMACHER FEED is strictly a grain ration, it is also the best and most economical feed for horses, brood sows, growing pigs, calves and cattle. For these animals it is a complete and balanced ration—ready to feed with ensilage, hay or other farm roughage. You can sell your high-priced whole grains, buy SCHUMACHER and save money and get far better results in growth of bone and weight in flesh.

If your dealer cannot supply you, write to us. Send today for a copy of our latest booklet, "WORLD'S GREATEST COWS AND HOW THEY MADE THEIR ASTONISHING RECORDS"—free postpaid.

THE Quaker Oats Company
CHICAGO, U. S. A.

1

World's Champion Junior 3 Year Old



Finderne Holingen Fayne

24612.8 lbs. Milk
1395.06 Butter in 365 Days

Schumacher Food an Important Part of Her Ration

"Now I certainly claim we have a most extraordinary cow, but I will give your feed a little credit for this most extraordinary performance as we have used your SCHUMACHER FEED and your Hitchen's Feeds for 2 years and I will say that it is the feed to feed if you want to get the most out of your cows. It would seem that to feed your cows to get the most out of them, you should feed a grain ration that would produce the most milk and butter fat, and I believe this grain ration is the feed to feed. Every cow that I have fed SCHUMACHER FEED to has done extra well, and I believe that is the reason why I have had such good success with my herd. Wishing you success with your feeds, I remain, Very truly yours, (Signed) Bernhard Meyer, Finderne, N. J.

2

World's Champion Junior Three-Year-Old
Record Held Nine Months

Dutchland Changeling Colantha Lad

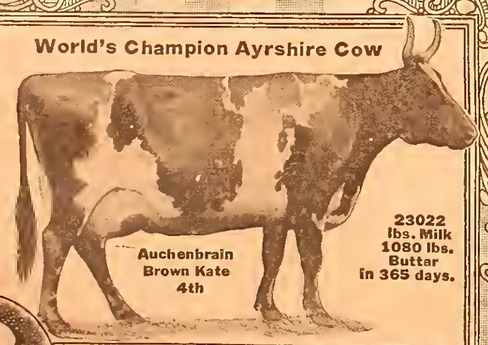
21239 lbs. 13 oz. Milk
946 lbs. Buttar In 365 days

Schumacher Feed Praised by Her Owner

"Your SCHUMACHER FEED has scored another big success as our new world's champion junior three-year-old heifer Dutchland Changeling Colantha Lad is being fed this feed as part of her grain ration. Her stable mates, Dutchland Colantha Vale and Dutchland Colantha Mona are also being fed same ration and will have world's records in the near future."—Fred. F. Field Holstein Co., Brockton, Mass.

3

World's Champion Ayrshire Cow



Auchenbrain Brown Kate 4th

23022 lbs. Milk
1080 lbs. Buttar in 365 days.

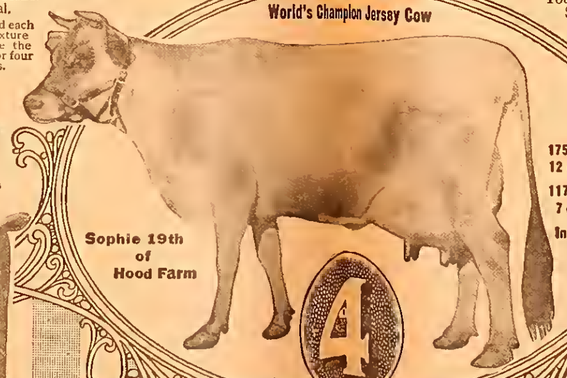
Would Not be Without Schumacher Feed

"We had such good results with your SCHUMACHER FEED, fed our world's champion cow—

"AUCHENBRAIN BROWN KATE 4TH, who produced 23022 pounds milk, 1080 pounds butter, in one year, that we have since fed it to all of our test cows. Yours truly,
Penshurst Farm, (Signed) E. S. Deubler, Supt., Narberth, Penn.

4

World's Champion Jersey Cow



Sophie 19th of Hood Farm

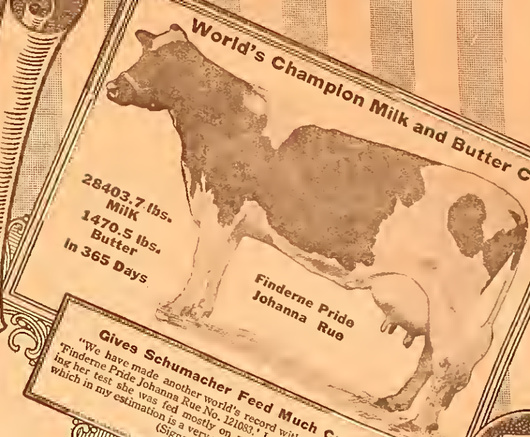
17557 lbs. 12 oz. Milk
1175 lbs. 7 oz. Buttar
In 365 days

Here's What Her Owner Says About Schumacher Feed

"It will probably interest you to know that we have been feeding SCHUMACHER FEED to Sophie 19th of Hood Farm, 13648. She finished her last record January 20, 1914, which makes her the Champion Jersey Cow of the world, and stamps her the greatest dairy cow living or dead. We consider SCHUMACHER FEED a splendid feed for dairy cows, and a strong factor in increasing the milk and butter production."
Very truly yours, Hood Farm, Per J. E. Dodge, Mgr., Lowell, Mass.

5

World's Champion Milk and Butter Cow



Finderne Pride Johanna Rue

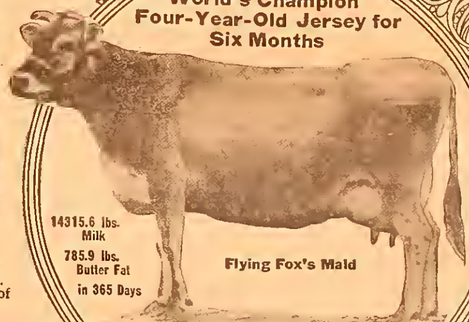
28403.7 lbs. Milk
1470.5 lbs. Butter
In 365 Days

Gives Schumacher Feed Much Credit

"We have made another world's record with our Holstein cow 'Finderne Pride Johanna Rue No. 124063,' I am glad to say that during her test she was fed mostly on your SCHUMACHER FEED, which in my estimation is a very valuable feed for dairy purposes."
(Signed) Bernhard Meyer, Finderne, N. J.

6

World's Champion Four-Year-Old Jersey for Six Months



Flying Fox's Maid

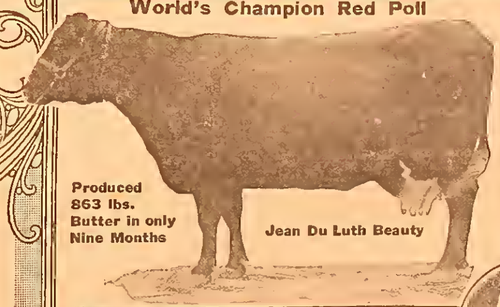
14315.6 lbs. Milk
785.9 lbs. Butter Fat
in 365 Days

Schumacher Feed Helped Make This World's Record

As a good example of the result of feeding SCHUMACHER FEED, I am pleased to report the record of our Junior four-year-old Jersey, Flying Fox's Maid, 155331, who has just made a record of 14315.6 pounds milk containing 785.9 pounds butter fat, exceeding the best previous record by nearly forty pounds. Her milk brought $572.02 at wholesale, and the cost of her feed was $170.76, leaving a net profit of $401.27 for the year. She was fed SCHUMACHER FEED for the last six months of her test, that feed replacing ground oats in her ration, and although fed no meal or bonemy, she finished in better flesh than she started. The result was so satisfactory that we are now feeding the entire herd in the same manner, and consider your SCHUMACHER FEED one of the most essential elements of our ration. Sincerely yours,
D. E. Moulton, Prop. Gilsland Farm, Portland, Me.

7

World's Champion Red Poll



Produced 863 lbs. Butter in only Nine Months

Jean Du Luth Beauty

Schumacher Feed a Liberal Part of Her Ration

"We are so well pleased with the work done by Jean Du Luth Beauty and Jean Du Luth Pear that we are making SCHUMACHER FEED a part of the ration in both our Red Poll and Guernsey herds. We have over 35 cows on official test."
Jean Du Luth Farm, Duluth, Minn.

(46)

10 MORE WORLD'S CHAMPIONS

1. CASTLEMAIN'S NANCY 4th
World Champion 2-year-old Ayrshire
14,494.8 lbs. Milk
644 lbs. Butter
in 365 days

2. EVA MAY ELLIS 5th
World Champion 2-year-old Holstein
507.5 lbs. Milk
31.39 lbs. Butter
in 7 days

3. GARCLAUGH MAY MISCHIEF
Another World's Champion Ayrshire
25,328.7 lbs. Milk
1,056.3 lbs. Butter
in 365 days

4. VALDESSA SCOTT 2nd
First 40-lb. Cow in the World
695.1 lbs. Milk
41.875 lbs. Butter
in 7 days

5. JOHANNA DE KOL VAN BEERS
Second 40-lb. Cow in the World
663 lbs. Milk
40.32 lbs. Butter
in 7 days

6. FINDERNE MUTUAL FAYNE
World's Greatest 2-year-old
22,150.4 lbs. Milk
1,200.63 lbs. Butter
in 365 days

7. LASS 64th OF HOOD FARM
World's Champion Junior 4-year-old Jersey
13,444.6 lbs. Milk
962.01 lbs. Butter
in 365 days

8. MOLLY JOHANNA KORNDYKE
World's Record 2-year-old Holstein
483.1 lbs. Milk
30.62 lbs. Butter
in 7 days

9. CEDAR LAWN DE KOL JOHANNA
World's Champion 2-year-old Holstein
Record held 2 years
25.8 lbs. Butter in 7 days
707.93 lbs. Butter in 365 days

10. LASS 66th OF HOOD FARM
World's Champion Senior 3-year-old Jersey
17,793 lbs. 11.2 oz. Milk
1,071 lbs. 4 oz. Butter
in 365 days.

RECORDS MADE WITH SCHUMACHER FEED

Go Slow and Buy Right

Lily and Primrose Separators

THE cream separator is the center around which every successful dairying establishment revolves. A good separator will add considerably to your cash income. You can't afford to buy at random. If you are not personally acquainted with the best features of the best cream separators, let us help you.

An ordinary separator will save you money, but if you want to make the most from your cream buy a **Lily** or **Primrose.** These **International Harvester** separators work so efficiently and for so many years that even the two- or three-cow farmers use them with profit. Is yours a bigger herd? Then take the advice of thousands of the most prosperous dairymen and buy either a **Lily** or a **Primrose.**

Lily and **Primrose** separators skim very closely—leaving only a drop of cream in a gallon of milk. They are strong and simple, needing few adjustments—which any man or woman can make. The frame on each is open and sanitary. The supply can is large and low. Every bearing and quiet gear is well oiled always by a splash system. There are no better separators.

Buy a **Lily** or **Primrose** from the **IHC** dealer and be sure of satisfaction. Write us for catalogues and booklets on dairying.

International Harvester Company of America
(Incorporated)
CHICAGO USA
Champion Deering McCormick Milwaukee Osborne Plano

The Unadilla A Great Silo

Door opening is continuous and unobstructed. Light, non-warpable doors fasten at any point and open at ensilage level to save back-breaking pitching labor. Adjustable door frame insures permanent air-tightness. Door fasteners form staunch ladder from which all hoops are tightened. Cypress roof fitted with folding doors and metal ventilator. Steel cable anchors hold silo immovable. Write for catalog and early order discount offer. Active agents wanted.
UNADILLA SILO CO., BOX E, UNADILLA, N. Y.

IT'S LIKE GETTING EXTRA MILK CHECKS

Suppose you got an extra milk check of $25 to $50 every month. 'Twould be only equal to the saving you'll receive if you install a

HINMAN MILKER

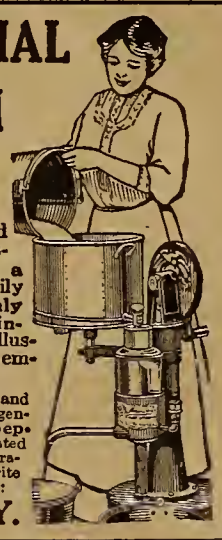
Then you can milk your cows at ⅓ the expense. You'll save ⅔ of the time, as even the boy can milk from 20 to 25 cows an hour, weigh and record the milk. Think of the value of this time in your busy season. In winter you would save the expense of a hired man. No more worry over being "short of milkers." The *Hinman* saves enough to pay for itself in about a year.

It is the original unit system. Individual pump and valve principles are two big exclusive advantagee. Price is low because of its extreme simplicity—only two moving parts. *Hinmans* milk 360,000 cows daily. Let ne send you the names of your nearest *Hinman* nsers and one of our free Milker books.

Hinman Milking Machine Co.
68-78 Elizabeth St.
Oneida, N. Y.

$15.95 Upward SENT ON TRIAL

***American* CREAM SEPARATOR**



Thousands In Use giving splendid satisfaction justifies investigating our wonderful offer: a **brand new, well made,** easy running, easily cleaned, perfect skimming separator **only $15.95.** Skims **one quart of milk a minute,** warm or cold. Makes thick or thin cream. Different from picture, which illustrates our low priced large capacity machines. Bowl is a **sanitary marvel** and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy ie large or small, or if you have **an old separator** of any make you wish to **exchange,** do not fail to get our great offer. Our richly illustrated catalog, **sent free** on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. **Western orders filled from western points.** Write to-day for our catalog and see what a big money saving proposition we will make you. Address:

American Separator Co., Box 1058, Bainbridge, N. Y.

Only $2 DOWN and One Year To Pay

For any Size—Direct from Factory

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

$24 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, cloee skimming, durable, lifetime guaranteed separator. Skime 95 quarts per hour. We also make fonr other eizes up to our hig 600 lh. capacity machine shown here—all sold at eimilar low prices and on our liberal terms of **only $2 down and a year to pay.**

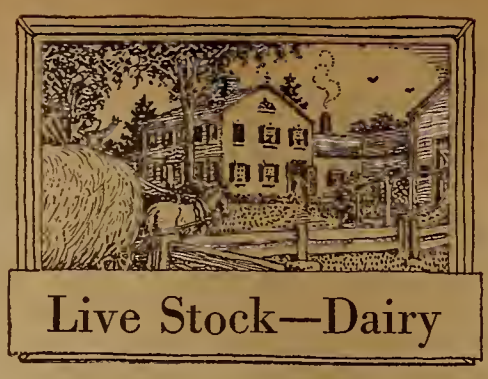
Patented One-Piece Aluminum Skimming Device, Rust Proof and Easily Cleaned — Low Down Tank — Oil Bathed Ball Bearings — Easy Turning — Sanitary Frame — Open Milk and Cream Spouts.

30 DAYS' FREE TRIAL GUARANTEED A LIFETIME

Yon can have 30 days FREE trial and see for yonrself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not yon can return it at onr expense and we will refund your $2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and eave money. Write TODAY.

Albaugh-Dover Co., 2139 Marshall Blvd., Chicago, Ill.

No. 5½ Over 75,000 now in use



Live Stock—Dairy

Feed Stock; Save Manure

AS SURE as the seasons come and go, just so sure does the question come up, "Shall I feed my crop of clover, cowpeas, or vetch, or plow it under for greatest soil improvement?"

This time it comes from an Ohio farmer, J. H. Durfee, who says: "I have been studying and experimenting with the matter of green manuring for four years intermittently. I have about all the government bulletins touching this subject, and those of the Ohio Experiment Station as well.

"Farmers' Bulletin No. 278, devoted to green manures, says on page 12: 'It is beyond question a better practice *from all standpoints* to feed a crop and then distribute the manure over the land than it is to plow under the whole crop.'

Green Manure is Cheaper

"The Ohio Agricultural Experiment Station Circular No. 135 states, on the first page, pretty plainly that 'the average cow is a losing proposition for the farmer.' It may not be quite fair to assume that the 'average cow' represents all classes, but I feel that it is not far from the truth for the average live stock. Now, these statements of the two bulletins seem somewhat contradictory to me. I think the Ohio circular is nearer the truth. Manure (barnyard) costs something. I should say that it must cost me, all things considered, more than one dollar per ton when spread on the land.

"Now, exclusive of land rent, green manure can be produced in some rotations for not over two dollars per acre. I am confident that green manure, in some rotations, can be produced to equal eight tons of barnyard manure per acre, or better. This, exclusive of land rent, for not over two dollars per acre.

"This year, in June, I plowed under clover and planted late potatoes on a field of about six acres. The yield was about 1,000 bushels. I know it was bad practice, but could not do better under the particular circumstances. I used a roller pulverizer to pack the soil as much as possible.

"I purchased a sprayer for $100, and I think it paid. Everyone for miles around has been troubled with rot. I had no rotten potatoes."

We felt it would only be fair for Dr. C. E. Thorne, director of the Ohio Experiment Station, to have a chance to pass on this important matter. Here are his opinions:

"I would modify the quotations from Farmers' Bulletin No. 278 by saying that it is beyond question a better practice *for the farmer who is able to handle live stock profitably* to feed his crops and then distribute the manure over the land than it is to plow under the whole crop.

"There are many farmers who have this ability, while there are probably as many, possibly more, who do not have it. I have just been summarizing the experiments with barnyard manure at this station.

Consider Mineral Elements Too

"These experiments show that as an eighteen-year average we have recovered from $4 to $5 for each ton of such manures when the manure had been preserved from loss by weather and reinforced with phosphorus. This is a higher value for manure than most farmers have been attaining, but not higher than is possible under careful and intelligent management.

"The plowing under of green crops will not maintain the fertility of the land, for the reason that these crops add nothing to the soil except nitrogen, whereas the time comes on all long-cultivated land when the restoration of the mineral elements becomes as imperative as that of nitrogen.

"As a twelve-year average at this station, in the five-year rotation of corn, oats, wheat, clover, and timothy grown on land which had been for many years in cultivation, the total value of the five crops on unlimed and unfertilized land has amounted to $52 for each rotation.

"Five dollars' worth of lime or ground limestone has increased this value to $66.

"Two dollars and fifty cents in phosphorus added to the liming has increased the value to $91.

"Six dollars and fifty cents in potassium, added to the phosphorus and lime, has increased the value to $100.

"Fourteen dollars and fifty cents in nitrogen, added to the lime, phosphorus, and potassium, has increased the value to $110.

"None of these elements, except the nitrogen, would be furnished by green manures.

"When nitrogen has been used alone in the same experiments, the total value has been $64, while 16 tons of barnyard manure added to the lime have increased the total value to $126.

"This work has been done on land that had been exhausted by three quarters of a century of exhaustive husbandry. By 'exhaustive husbandry' I mean that in which crops have been grown in rotation, but everything has been taken off the land and nothing returned except the roots and stubble of the various crops. It is true that the plowing under of green manures will for a time increase the crop yield because these manures add nitrogen and bring up from the subsoil a little phosphorus and potassium; but the experiment above outlined shows that where the roots and stubble only are returned the value of produce remains at a low point.

"The analysis of the clover plant indicates that the fertilizing elements carried in the hay are worth approximately twice as much as those left in the roots and stubble, but to the man who has the ability to feed the hay with profit it becomes a very expensive source of nitrogen. Such a man can do better to acquire his nitrogen by feeding the hay and carefully saving and returning the manure."

Sled Beats Wheelbarrow

H. D. AYERS of Minnesota sends this method of handling manure with the device illustrated. First, make a large sled with well-braced runners of 2-inch plank. Build up the sides of the top about a foot and a half so the load will stay on. Take a steady horse, load

your sled in the barn, haul it out, and tip it over at the desired place, as the man is just doing.

This sled isn't supposed to do the work of a manure spreader. It is just an improvement over the wheelbarrow method of getting manure out of the barn.

Making Money With Poultry

[CONTINUED FROM PAGE 3]

until the chicks can safely eat unhulled oats.

The chicks are fed four times daily the first week, three times daily for three weeks, and after the fifth week twice daily. When it is desired to push growth more rapidly, a moist mash is fed daily, and skim milk is kept before the chicks *ad libitum.*

Contrary to the experiences of many, Mr. Dawson believes in accelerating the molt when hens are to be kept for a second year for laying. He does not practice the severe and continued starving process which was formerly recommended by some radicals. His method is to feed as much as the hens will consume of a rich ration for two weeks just previous to the time the molt is to be induced. Then for three days feed nothing, or just the scantiest possible ration of wheat-bran or oats. At the end of three days he begins feeding a very scant ration and increases gradually so that by the twelfth day following the fast the birds will be back on full feed.

This method used with yarded hens (Leghorns) has thrown a large proportion of the birds into their molt soon after they are back on full feed.

Green succulent feed in generous quantity has proved a winning card in Mr. Dawson's poultry operations.

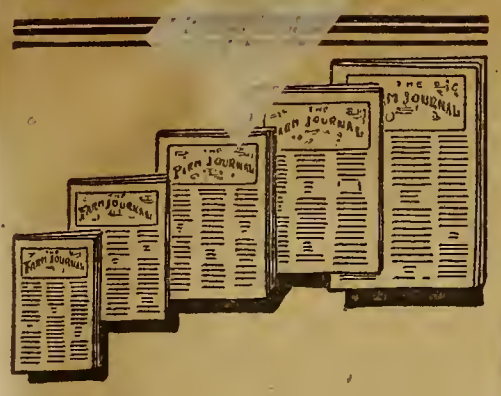
The day I visited this farm preparations were on the way for sowing rye in the poultry runs.

This practice of plowing and seeding the yards and runs twice a year to rye and rape is a most important safeguard against the contaminated soil conditions which are a curse to so many poultry plants that are heavily stocked.

In the large building connected with the laying house are kept the feed supplies, fodder cutter, feed and bone grinding machines, marketing crates, etc.

Fresh cut bone is fed by Mr. Dawson only in cold weather, when danger of that gravest of feeding dangers, poisoning, is least to be feared.

E



Why It Grows

Every member of the family benefits from the **Farm Journal.** It educates. Encourages Father in his farm-work, and helps Mother in hers. Wholesome and inspiring to boys and girls.

Against Whiskey, Fake Medicines and schemes of all kinds. For 35 years it has protected its readers from fraudulent advertising.

That is why it grows. Why last year 800,000 homes, this year nearly 1,000,000, consider the **Farm Journal** a friend and adviser that they would not do without 5 years $1.

Send today for free sample of Farm Journal and free copy of Poor Richard Almanac for 1916.

The Farm Journal

105 Washington Square, Philadelphia

THE SCHOOL OF VETERINARY MEDICINE AT THE UNIVERSITY OF PENNSYLVANIA

trains students in all lines of veterinary work. Facilities unexcelled. For catalog, address **Louis A. Klein, Dean, Dept. B, 39th St. and Woodland Ave., Philadelphia, Pa.**

Quaker City Feed Mills

Grind corn and cobs, feed, table meal and alfalfa. On the market 49 years. Hand and power. 23 styles. $3.80 to $40. **FREE TRIAL.** Write for catalog and farm machinery bargain book.

THE A. W. STRAUB CO.
Dept. B3733 Filbert St., Philadelphia, Pa.
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JACKS and MULES

Raise mules and get rich. 230 head fine large jacks, jennets and mules 14 to 17 hands high. Large registered jacks and draft stallions cheap now. Mules by the pair or carload. Stock guaranteed. Write for prices today. Address

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West Elkton, Ohio

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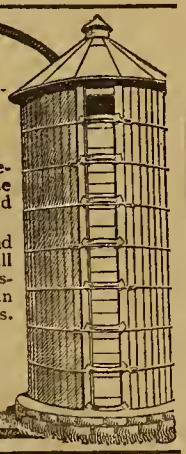
our sales office nearest you for prices and terms on fertilizers adapted to your soil and crops.

Send for Booklet - Free

The American Agricultural Chemical Co.
New York, Baltimore, Philadelphia, Buffalo, Cincinnati, Cleveland, Detroit, etc.

HARDER SILOS



have been for 17 years the recognized Leaders, used by the most prominent dairymen, copied by competitors.

They keep the silage pure and sweet in coldest weather, save all the corn crop, give universal satisfaction. Storm-proof, solid as an oak, doweled staves, sealed joints.

Illustrated Catalog tells of distinctive Harder features.

HARDER MFG. CO
Box 16, Cobleskill, N.Y.

Send for Free Catalogue

THOUSANDS LIKE THESE

J. N. Falkenham, Box 33, Andover, Me., Oct. 20, 1915, writes: "Please accept my thanks for your advice. I would not be without your remedy again if it cost twice as much."

"I Want the Whole World to Know What It Has Done For Me."—Frank Stevens, of Greenwood, Ind., writes and adds: "Save-The-Horse has cured bone spavin, thoroughpin, and one with a sprained stifle."

96 PAGE BOOK FREE

Our Charges for Treatment ARE MODERATE, and for over 20 years we have given a signed contract to cure or refund money. BUT WRITE and we will send our FREE 96 page "Save-the-Horse Book"—it is the Quintessence and last word of UP-TO-DATE knowledge and practice on ALL LAMENESS—Ringbone—SPAVIN—and ALL Shoulder, Knee, Ankle, Hoof or Tendon Disease.

Also Sample Contract and ADVICE—ALL FREE (to Horse Owners and Managers—Only). Address

TROY CHEMICAL CO., 59 Commerce Ave., Binghamton, N. Y.
Druggists Everywhere sell Save-The-Horse with CONTRACT, or we send by Parcel Post or Express paid.

E

Your Questions

Curing a Swollen Knee

I have a Holstein cow that was shipped from New York State, and last winter one of her knees or the skin on her knee began to puff or swell, and later the other did the same. The cow seems about normal otherwise. *H. H. D., Oregon.*

YOU do not state whether the cow is lame or whether the swelling is soft or hard. We strongly suspect, however, that lameness is absent and the swelling large, soft, and evidently containing fluid. If that is so, it is due to bruising upon the manger or floor, and is termed a "hygroma," a condition which is quite common in cows, most often confined to one knee and in no way associated with rheumatism. When rheumatism apparently is present and affects the joints, the cow should be tested with tuberculin, as tuberculosis often is present when such symptoms are seen. The popular treatment for hygroma is to run a tape seton down through the sac, tie a leather washer to each end of the tape, and then pull the tape up and down in the sac, two or three times a day, to cause the serum to flow out. The tape may be rubbed with turpentine or tincture of iodine once a day to cause more irritation. It is very much better practice to open the sac at the lowest part, liberate the serum, insert the cleansed finger, and break down any partitions present and also remove clots. Then inject tincture of iodine once, and afterward pack the cavity full of antiseptic gauze, or oakum saturated in a mixture of equal parts of raw linseed oil and turpentine. The packing should be renewed once daily until the cavity has filled up. Prevention of bruising is important. A. S. A.

Indian Game Broilers

Please advise me as to whether or not the Indian Games are a good breed of chickens. *Miss M. K. D., Ohio.*

THE Cornish Indian Games are considered among the best for broilers. They mature early and have a large percentage of breast meat. They are fairly good egg producers, but not equal to the best strains of the heavy-laying breeds.

Feeding Broom Sedge

Is broom sedge of any value as feed for horses? Would it be safe as a roughage fed with shorts or meal if the broom sedge is cut into short lengths and mixed into the ground feed?
E. Beasley, Indiana.

IF broom sedge is made into hay before it gets tough and woody it is about equal in feeding value to corn fodder. It can be safely fed with shorts and meal.

Pigs with Fits Unprofitable

I have a Berkshire gilt that has had two litters of pigs. Two pigs from the first litter have had something like fits. One pig from the last litter trembles and jerks all of the time. What is the cause and the remedy? *J. C. B., Florida.*

CONVULSIONS or fits are common in pigs suffering from indigestion or worms, and lack of exercise may be a contributive cause. Overfed, under-exercised sows are liable to have pigs so affected. Overfeeding nursing sows with corn is perhaps most likely to cause trouble.

The pigs that tremble and jerk have thumps, and that ailment is similarly caused.

In the future, feed the pregnant sows very little rich feed and little or no corn. Let them run out daily, and feed light, laxative slops, roots, and alfalfa hay. When the pigs are born do not feed any rich grain or slop to the sow for the first week; then gradually strengthen the feed, but avoid heavy feeding on corn. Make the sow and her pigs take plenty of exercise every day, as soon as the pigs are able to run.

Physic the pig that has thumps, and then feed milk, middlings, and a little linseed meal in form of slop, to which add lime water at the rate of one ounce to the pint of slop. Allow free range. Prevention is all important. A badly affected pig will not be likely to prove profitable.

Horse Vacations Cost You Money

You have to feed your horses whether they work or not. The galled horse, the horse with a chafed, sore or bruised neck or shoulders is a constant expense. He either loafs entirely or doesn't do a full day's work.

Stop this useless waste of horse power on your farm. Pad your horses. It helps them and helps your pocket book.

A Tapatco Padded Horse Earns You Money

This pad prevents bruises, chafed spots and sores. When your horses begin to lose flesh under spring work, your collars instead of hanging loosely and chafing will fit snugly if they are Tapatco padded.

They will prevent galls and sores. You'll get more work from your horses because they'll feel more like working.

Fit Any Collar

No special adjustment necessary. Tapatco pads are padded with our own specially prepared composite stuffing. Soft, springy and very comfortable. Very porous.

Ask your dealer for the Tapatco free book of emergency horse remedies.

THE AMERICAN PAD & TEXTILE CO.
Greenfield **Ohio**

We also make a full line of riding saddle pads

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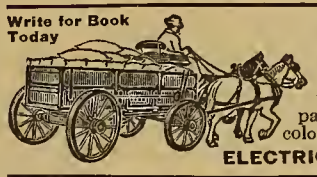

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High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

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raised on our own farm and sold at wholesale prices.

The real point to consider about seed corn is to get a variety that will mature in your locality and give the **largest possible yield.** We have **thoroughbred** strains of extra early and medium early varieties that will suit all conditions in the North. One yield as high as **200 bushels of ears per acre.** Send for a sample. Our free catalogue tells all about them and will help you decide which is the best variety for your conditions. A card will bring it.

Joseph Harris Company
Box 30 **Coldwater, N. Y.**

HARRIS SEEDS

The loss of a single one is *your* loss! Don't be a loser! Win!! Sloan's Liniment is a winner! It insures against complications and losses—

Use SLOAN'S LINIMENT 25c. 50c. $1.00

Planet Jr. Cultivators

have no equal anywhere

They produce the best crops and biggest profits wherever used. The result of a half century's experience of a practical farmer and manufacturer. Fully guaranteed.

No. 76 Planet Jr Riding Cultivator plows, hills and cultivates corn, potatoes, or similar crops 28 to 48 inches apart. Specially hardened cultivator steels add 50 per cent to wear. Dust-proof steel axles. Pin-break or spring-trip standards. *Eight styles—lower prices than ever before.*

No. 9 Planet Jr Horse Hoe is better made, and capable of a greater variety of work than any other cultivator. Its great strength prevents breaking or bending; long frame makes it steady running; new steel wheel prevents clogging; and beveled steel teeth, specially hardened, retain shape, insure durability and thorough cultivation. *15 other styles of one-horse cultivators—various prices.*

New 72-page Catalog (184 illustrations) **free!**

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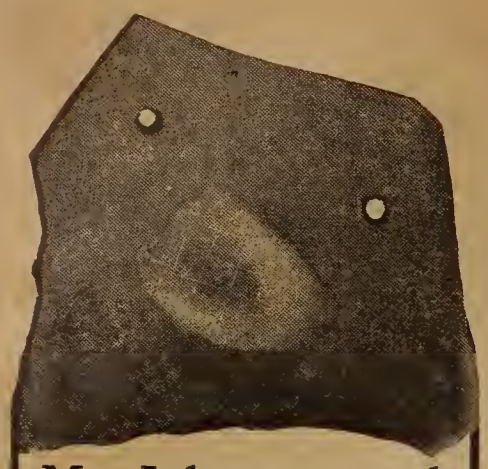


Mr. Johnson used an Oliver No. 40 Chilled Plow for Thirty-Five Years

Mr. C. S. Johnson of Elnora, Indiana, has used an Oliver No. 40 Plow every year for the past 35 years in sandy loam. He states that the plow is in almost perfect condition.

Mr. Johnson's experience is like that of many others who have used Oliver Plows from 12 to 40 years.

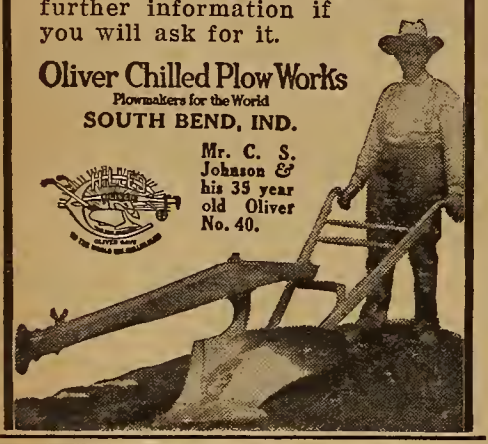
One would naturally expect a plow to rust away before that time.

The illustration at the top is a piece of Oliver Chilled Metal exposed to the weather for at least 20 years. The rust on the surface was scraped off, revealing the little tell-tale Oliver chilled check marks plainly visible to the eye.

An Oliver Chilled Plow cannot deteriorate while standing idle because the removal of rust restores the polished mouldboard in as good condition as when the plow was taken out of the ground after last being used.

An Oliver No. 40 wears from two to three times as long as you expect the average plow to wear, and does a better grade of work.

We will be glad to give you further information if you will ask for it.



Mr. C. S. Johnson & his 35 year old Oliver No. 40.

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Nothing on Earth Like
THE STANDARD INOCULATION
FARMOGERM
HIGH BRED NITROGEN-GATHERING BACTERIA
for CLOVERS, ALFALFA, BEANS, and OTHER LEGUMES

Best and Cheapest Fertilizer for producing bigger crops of Peas, Beans, Alfalfa, Clover and all Legumes. We have a handsomely colored, illustrated magazine called the "Legume Grower." It sells for 10c, but we will mail you one copy free if you mention Dept. 75, and tell us the name of your seed dealer.

Earp-Thomas Farmogerm Co., Bloomfield, N. J.

Made of best quality roofing felts, saturated with properly blended asphalts, and coated with a blend of harder asphalts. This keeps the soft saturation within from drying out, and makes a roof pliable, yet durable and impervious to the elements.

Guaranteed for 5, 10 & 15 years, according to ply (1, 2 or 3). Lasts longer. Sold by good dealers everywhere, at reasonable prices.

General Roofing Mfg. Co.
World's largest manufacturers of Roofing and Building Papers.

Farm Notes

Bicycle for Errands

By C. G. Reynolds

I LIVE one-half mile from my rural-delivery mail box, and have been walking a mile nearly every day to get my mail.

It usually took one-half hour to walk there and back, and was a rather tiresome trip. So I bought a bicycle.

I got a low-geared one with a spring seat and coaster brake. Now I can make the trip in about ten minutes, and it is rather a pleasure. I use it for other trips too, and would rather ride it for three or four miles than to hitch up a horse to make the trip. Of course it is a sort of work, but is not much harder than running a grindstone with foot pedals. I have ridden my bicycle about 825 miles since May, with only one puncture.

THE first milking machine appeared in this country in 1868, but not until about 1910 were milking machines pronounced a success.

An Ohio Sod House

By M. G. McBride

AN AGED couple desired to live on a farm they rented. This picture shows the house they built.

The house is about 13x16 feet, and about four feet below the surface of the ground.

The frame was made of culls, and was boarded and floored with culls. Over

This was "home" until the couple could buy the farm and build

this cheap covering large sheets of tin roofing which a high wind had torn from buildings within the town, a mile and one half away, were used to cover the roof and sides.

Dirt was thrown over the tin roof and heaped upon the sides. This was sodded over.

The lower story was 6½ feet high, with a door at one end and a window at the other. There was also a sloping outside cellar door for further protection against the rains and snows. This floor was used for a kitchen and general living-room.

A narrow flight of stairs led to the upper room.

The upper room was a half-story, with a window at each end. This room was used for a sleeping- and general living-room when desired.

This sod house was warm in winter and cool in summer.

The cost was less than $20, not counting labor, which was done by the occupants.

They later purchased the little farm and built a house, but this sod house was their home for several years.

Use More Sugar Now

WHEN great-grandfather was a boy he got along with less than a dozen pounds of sugar a year, about one-third ounce a day.

His father, mother, sisters, and brothers had no more than he did.

His great-grandson and all the members of his family now sweeten up by consuming a quarter pound of sugar daily, every day in the year.

Hot Lunches for Schools

THE Nebraska Agricultural College at Lincoln has issued a bulletin (No. 32) on School Lunches. Suggestions are given for a system of hot lunches for schools, and descriptions of the equipment required. A good deal of sociability, as well as domestic economy training, comes into the school with a successful system of this sort.

EQUAL parts of kerosene and machine oil make an excellent lubricant for removing paint from the bearings of new machinery and getting it to run easily.

A VACUUM churn is now on the market which does all the work formerly accomplished by a pasteurizer, cooler, ripening vat, churn, and worker. It is a large machine intended for creamery work.

THE scarcity of farm labor in Scotland, as a result of the war, has forced the conservative "canny Scots" to adopt motor tillage. A recent tractor demonstration in Scotland created a favorable impression.

"Farm-to-Home Plan"

By F. G. Heaton

DIRECT selling, which eliminates the middlemen, brings the producer and consumer into close touch, and insures high quality products at low prices, is an ideal toward which farmers, consumers, various quasi-civic organizations, and the United States Post-Office Department have been striving for several years.

Four young men conducting a dairy business in the District of Columbia have solved the problem to the satisfaction of all concerned.

From their farm, within a few miles of the boundary between the District of Columbia and Maryland, these young men supply their patrons with milk, cream, butter, buttermilk, day-old eggs, home-dressed poultry, fresh vegetables and fruits, and general farm products, making deliveries in quantities and at times directed by the buyers. Orders are taken through personal letters, which are mailed to the individual patrons from time to time, the list of patrons, kept in a card index, being corrected as often as is necessary.

Products are always sold at prices below those charged for the same articles in the city markets, and nothing ever goes out that is not strictly inspected and found to be perfect. A letter sent to all patrons recently is an example of the company's method:

DEAR MADAM: You can buy potatoes from us at 22 cents a peck, 80 cents a bushel, or $2.10 a barrel.

If you cannot handle a barrel at one time, but wish to take advantage of the barrel price, we will be glad to accept your order and deliver it in half-bushel lots, as you direct.

If you will leave the enclosed order card, properly filled out, with your milk bottle, or, better still, mail it to us, it will be given prompt attention.

Should you wish to order high-grade country butter or creamery butter, please note this also on the order card, stating on what days you wish us to deliver the butter, and in what quantities.

From time to time we shall send you letters calling attention to special prices and provisions, and we are sure that it will pay you to take advantage of these offers.

Please let us have your order on the enclosed card as soon as possible.

The card enclosed with the letter, an unstamped post card, read like this:

You may book my order for —— barrels of potatoes at $2.10. Deliver —— to me at once, and the rest as I order them. You may deliver —— lb of creamery butter at $40c, —— lb of country butter at 38c, to me on —— every week.

Yours truly,
Name .....
Address .....
Phone No. .....

Patrons may fill out the order cards and slip them into the mouths of milk bottles, to be taken up by the delivery man the following morning, or the cards may be stamped and mailed. In either case, the orders are filed the day they are received, and delivery is made promptly as the patrons direct.

The company supplies blank cards for the use of patrons, on which may be ordered extra quantities of milk, cream, or butter to be left when the delivery truck makes its rounds early the next morning.

During the summer the company supplies fresh vegetables and fruits, patrons ordering what they desire and slipping the order card into the empty bottles. Products are delivered fresh and crisp, in attractively packed hampers, early in the forenoon of day order is received.

Shortly before Thanksgiving the company notified all of its patrons that it was in a position to furnish home-dressed young turkeys at a price several cents a pound under that asked in the city markets. Patrons were told that they might order several turkeys, to be delivered from time to time, the price quoted to rule during the winter.

Last fall the company marketed several hundred barrels of extra choice apples by this method, booking orders for delivery in half-peck, peck, half-bushel, or bushel quantities if patrons did not

There Is a Size Avery Tractor to Fit Your Size Farm

WE build Avery Tractors to pull any number from 2 to 10 mold board plows. You can make your selection from the most complete line of tractors and plows built and can get a size outfit to exactly fit your needs.

No Other Tractors Have Met Such Tests

Introduced by Sold-On-Approval policy—entered in every big public contest and demonstration ever held—proved successful by thousands of owners. Avery outfits are built and backed by an established company owning a large factory and many branch houses, which insure your getting a well-built machine and having prompt and permanent service after you get it.

Avery Tractor success is due to these special features in their construction: Sliding Frames, Double Drives, 2-Speed Gears, Low-Speed Heavy-Duty Tractor Motors, Extra Large Crank-Shafts, Renewable Inner Cylinder Walls, no Pumps or Fan. Prices: 3-Plow Tractor, $760 cash; 4-Plow Tractor, $1120 cash, 6-Plow, $1680; 6-Plow, $2145; 8-10-Plow, $2475. Avery "Self-Lift" Plows and "Yellow-Fellow" Threshers are also built in sizes to fit any of the above size tractors. We also build a special smaller size tractor for $295 cash.

Write for new free 1916 Avery Tractor, Plow and Thresher Catalog and learn all the facts about Tractor Farming, Threshing, Road Building, etc., with an Avery Outfit.

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1066 Iowa Street, Peoria, Ill.
Ask for address of nearest Branch or Jobber

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One Man Outfits 6 Sizes Fit Any Size Farm

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In use over 50 years
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THE FRONT THAT GAVE THE GRIFFIN SILO FAME

Continuous Open Door Front. Permanent Steel Ladder Attached.
Size 8 x 20 $ 80.00
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Other sizes in proportion. Discounts to agents.

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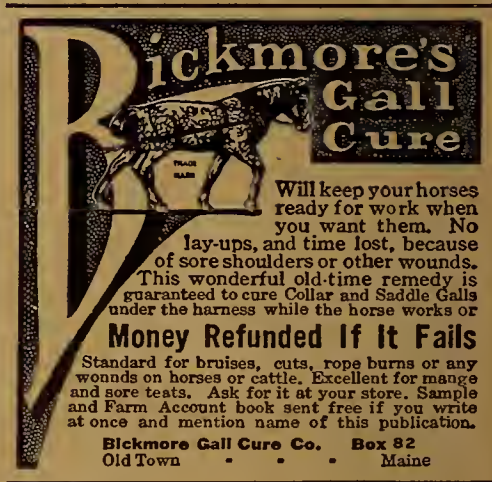
BEFORE YOU BUY WRITE FOR NEW CATALOG DESCRIBING THE GUARANTEED MONEY-SAVING

INTERNATIONAL SILOS

strongest built, simplest to put up and easiest operated on the market. Adjustable automatic take-up hoop—continuous open-door front—air-tight door and permanent ladder are some of the unusual features. The International Silo Co., 126 Main St., Linesville, Pa.



Will keep your horses ready for work when you want them. No lay-ups, and time lost, because of sore shoulders or other wounds. This wonderful old-time remedy is guaranteed to cure Collar and Saddle Galls under the harness while the horse works or

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Standard for bruises, cuts, rope burns or any wounds on horses or cattle. Excellent for mange and sore teats. Ask for it at your store. Sample and Farm Account book sent free if you write at once and mention name of this publication.

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Sows Fertilizers QUICKLY EVENLY

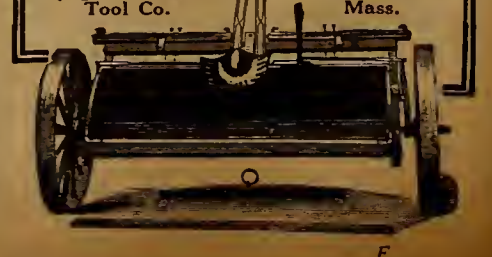
Sows broadcast or in rows all kinds of commercial fertilizers—nitrate, phosphate, guano, lime, ashes, etc. Distributes it fast and evenly in amounts from one hundred to several thousand pounds per acre. Simple and strong. Gauge is easily and quickly set.

The Chicopee Line

STEVENS
Fertilizer Sower

Has only force feed which will sow successfully all kinds of commercial fertilizers in large or small quantities. No springs or gears in box. Order one this season. We'll refer you to a dealer if none near you. Send today for 64-page Catalog of Chicopee Line tools—the line of 63 years' sterling reputation. There's an implement for every farm need.

Belcher & Taylor Agricultural Tool Co.
Box No. 25 Chicopee Falls Mass.



ORE HINTS

ood is Not Suited.

Whe ature gives her signal that something is wrong it is apt to be with the food. The old Dame is always faithful and one should act at once.

To put off the change is to risk that which may be irreparable. An Arizona man says:

"For years I could not safely eat any breakfast. I tried various kinds of breakfast food, but they were all soft, starchy messes which gave me distressing headaches. I drank strong coffee, too, which appeared to benefit me at the time, but added to the headaches afterward.

"A friend persuaded me to quit coffee and the starchy breakfast foods, and use Postum and Grape-Nuts instead. I shall never regret taking his advice.

"The change it worked in me is wonderful. I now have no more of the distressing sensations in my stomach after eating, and I don't have headaches. I have gained 12 pounds in weight and feel better in every way.

"Grape-Nuts make a delicious as well as a nutritious dish; and I find that Postum agrees perfectly—never produces dyspepsia symptoms."

"There's a Reason." Name given by Postum Co., Battle Creek, Mich.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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FREE CATALOGUE OF SPLENDID BARGAINS.
R. B. CHAFFIN & CO., Inc., Richmond, Va.

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We positively teach you at home by mail to earn $25 to $50 weekly as Chauffeur or Repairman. Students assisted to positions. Best system, lowest price. MODELS FURNISHED. Write for Free Book.
Practical Auto School, 70A Beaver Street, New York

New Edition (264 Pages) of Modern Silage Methods
Only 10c

ENTIRELY a new book—new chapters—tells facts about every type of silo—home made, stave, brick, cement, tile, metal, pit, etc. Tells best for your needs—impartial suggestions for making most profits. 264 pages—10 page index—Copyrighted Nov. 1914, covers 41 silage crops. Send for new book; it beats all previous editions. Write today. Mailed for 10c. Mention this paper. Silver Mfg. Co., Salem, O.

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Give the roots a chance
You can go deep without bringing up trash, stones or manure. You can at the same time pulverize and level. For thrifty crops rely upon the *forged sharp*, penetrating disks of the
Cutaway (CLARK)
Disk Harrow—Single or Double Action—light in draft and built for a lifetime of service. If your dealer has not the *genuine* CUTAWAY, write to us direct. Be sure to write us for our new free book, "The Soil and Its Tillage." Get your copy *now*.
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Maker of the original CLARK disk harrows and plows
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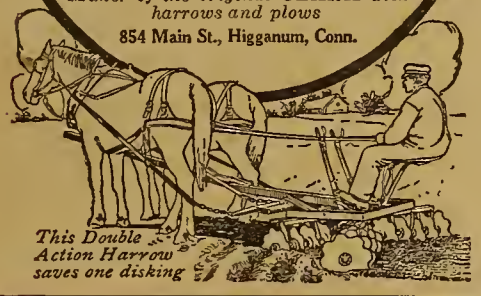
This Double Action Harrow saves one disking

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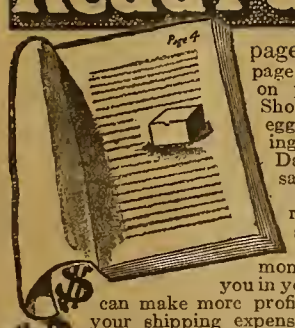


page 9, 17 or any page of our free book on poultry packing. Shows how to pack eggs without breaking and how to ship Day-old Chicks in safety.
It will pay you to read this book and see how much time, labor and money we can save you in your shipping. You can make more profits by decreasing your shipping expenses when you use
H & D POULTRY Egg & Chick BOXES
Strong, light, easily packed and handled. Chick boxes provide ventilation without draft. They come folded flat and can be stored in small space. No sawing or nailing. Meet all government requirements for parcel post shipping.
Write for Free Book
"H & D Poultry Specialties" or send 10c for "Farm to Home Selling," a book which gives full instructions for building a mail order business in poultry, eggs or farm produce. We send 10c rebate coupon so the book is really free.
The Hinde & Dauch Paper Co.
128 Decatur St. Sandusky, O.

wish a barrel at one time. All of the apples were hand-sorted and hand-packed, and not even one imperfect apple went into any of the packages.

The four young men composing the company started in business less than four years ago, with a herd of fifteen cows. Their delivery equipment consisted of one one-horse wagon, and their farm was a 50-acre place, poorly equipped for dairying or farm purposes—one of those run-down, practically abandoned farms common in many parts of the East. To-day they have a herd of 75 grade Holsteins; they have increased the size of the farm from 50 to 140 acres, and their delivery business is handled by means of two automobile delivery vans.

A feature of the business is the manner of rendering monthly statements. The bill used by the company is arranged for each day of the month, with columns in which are entered the amounts of milk, cream, buttermilk, etc.; the quantities of vegetables, dozens of eggs, number of dressed fowls, each item entered in the space opposite the day on which the articles were delivered. On bills that are paid before the tenth of each month the company allows a discount of 10 per cent, while patrons whose bills are not paid by the tenth do not receive the discount.

The company plans to increase the number of cows to 100 after January 1, 1916, and also plans to add to the acreage of the farm. All of the cows are tuberculin-tested, and the milk that is served is pasteurized.

Post Holes in Hardpan

By Amos Gridley

IT SEEMS to be my luck to strike hardpan whenever I have a job of post-setting to do. It's a tough, jarring task. But here is the solution:

Simply take the handle out of the pickax and put one point of the pick in a piece of iron pipe. I found that with the pick I had, a five-foot length of 1¼-inch pipe was just the thing. Then start the hole with a shovel, and as soon as you are down to hardpan, work the edges of the hole with the point of the pick and use the pipe as a lever. Of course you have to use a shovel to get the dirt out, but this tool is the best thing I have tried for loosening hard dirt.

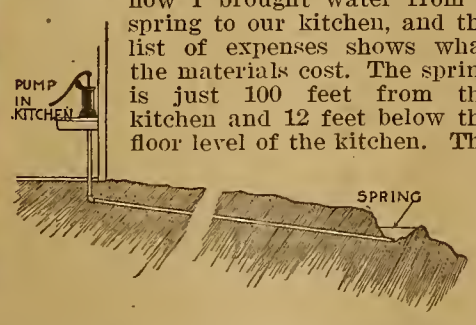
To Thaw Dynamite

DYNAMITE will freeze. It should be thawed out before it is used. This can be done with an old barrel of some kind and a five-gallon can having a closed top. Fill the can with boiling water. Have the bottom of the barrel covered with straw about three inches deep. Place the filled can in the barrel and lay the sticks of dynamite around it. It may be advisable to cover the hot can with a sack so that the can does not touch directly any of the explosive. The dynamite may be laid to the height of the can, and in such a way as to allow free circulation of heat. Then fill the barrel with sacks to hold the heat. Holes in the bottom of the barrel will guard against the danger of having free water held there should any be accidentally spilled. A five-gallon can of hot water is sufficient to thaw 50 pounds of dynamite. There is no danger of explosion in this process, as the heat within the barrel about the dynamite does not exceed 80 degrees.

Little Kitchen Pump

By H. R. Crabb

I HAVE known for a long time that water is heavy and hard to earry, but I never realized it was so easy and inexpensive to pipe. The sketch shows how I brought water from a spring to our kitchen, and the list of expenses shows what the materials cost. The spring is just 100 feet from the kitchen and 12 feet below the floor level of the kitchen. The



pump I used is an ordinary cistern pump, pitcher-spout type, and it works fine.

Pump	$2.85
Sink	2.50
100 feet 1¼-inch pipe	8.00
Coupling and elbows, 1¼-inch	1.35
35 feet 1½-inch pipe from sink	3.50
Coupling and elbows, 1½-inch	.50
Pipe cement	.20
Pipe cutter, stock and dies, wrenches, vise, etc.	7.60
Total expense in money	$26.50

I removed the foot valve at the spring end of the pipe as soon as freezing weather came, so that the pipe would drain at night, and aside from the trouble of starting the water in the morning the pump works as easy as with the valve on. I believe that with the aid of a foot valve and two or three check valves, this plan of getting water from a spring would do for 200 feet and a 15-foot lift.

I did every bit of the work myself, as could anyone else who handles tools. You must take pains to make the joints air-tight or you will meet with disappointment. I am not writing this for the benefit of those who can install a pneumatic tank and fixtures amounting to several hundred dollars, but for those who have a nice spring handy and think it would cost too much to put the water in the kitchen. The efficiency of the little kitchen pump is greatly underestimated. At a trifling expense it will save many a step.

Rearing Jumbo Squabs

[CONTINUED FROM PAGE 7]

will save the loss of many birds and prevent disease.

The soil in the outside cage floor is turned under regularly and air-slaked lime sifted on the ground occasionally to prevent the soil from getting sour. A pile of gravel is heaped in one corner of the cage yard, and a lump of rock salt is always at hand.

I fed the birds in hoppers a mixed pigeon grain ration purchased at the feed store already mixed. It contains the essentials for a perfect ration, and twice a week I add a little hemp seed. Hoppers filled with grit, oyster shell, and charcoal are kept constantly in each pen. The gravel on the pen floors is raked up each week, and the entire mass is removed occasionally and replaced with fresh gravel.

After the eggs are laid it takes seventeen days to hatch them. The squabs are ready to market in three to four weeks. Some parent birds feed better than others, and some youngsters also develop faster.

A good, safe rule to follow is to kill the squabs when the feathers are developed under the wings. When a pair of squabs are about two weeks old another pair of eggs are laid. This continuation of squabs and eggs is a marked characteristic of the breeds I have named.

When the squabs are ready to kill they are taken from the nest and put into a cage together, and left for twelve hours without food. They are then stuck and picked, and kept in a cold place to remove all animal heat; then are put up in pairs of the same size and condition and are ready for market. Jumbo squabs must weigh two pounds, and I usually have them average two and one-half pounds dressed.

At the present price of feed I calculate that it costs me 35 cents to raise a pair of squabs; but I always get a top price for my quality birds—75 eents to a dollar a pair.

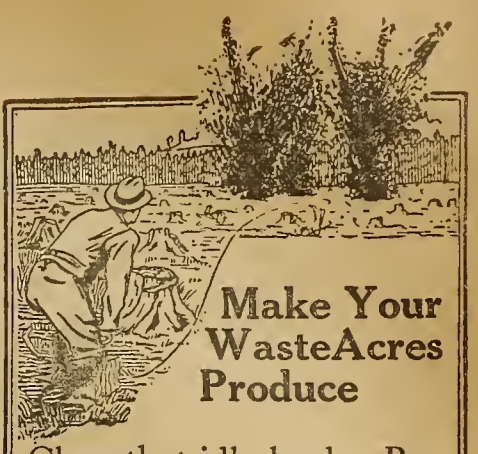
The ocean-going boats, large hotels and restaurants, and private families are the best markets for squabs. On account of the war conditions abroad very few ocean liners are taking squabs. This, with the high cost of feed, seems to have discouraged many squab raisers throughout the country. However, I feel confident that 1916 will be a profitable season for those who have the nerve to stay in the business.

It is my method to keep a certain number of mated pairs in each pen. And a rule that will pay is to supply two nest boxes for each pair of birds. Caleulate the desired size of the pen accordingly. I prefer to keep about 25 mated pairs in a pen that would accommodate 40 pairs, with one nest box to each pair.

Clean, dry quarters and perfect and regular feeding prevents serious trouble from pigeon maladies. I put Venetian red into the drinking fountain. In summer the fountains are scalded out thoroughly at least once a month. In winter and cold weather it can be done at longer intervals. The bath tubs must be kept clean at all times. Just now I am trying to teach my birds to take dust baths, with some success. For that purpose I place road dust and sifted wood ashes in a soap box set in the inside pens.

I have found that a good pair of birds properly mated will work satisfactorily five years, and then I dispose of them. In conclusion I shall state a few important facts I have learned by experience.

Mate the birds before putting them into the pen. Buy the best stock. Raise your own stock, and infuse new blood when necessary to prevent direct inbreeding. Keep the pens clean. Teach the birds to know you, and never permit them to be frightened. Feed the best food. Supply fresh drinking water, grit, gravel, aud salt frequently. Don't send the squabs to market till they are conditioned properly. Begin in a small way, and enlarge the plant to meet the business demands. Keep the place clean and dry and free of drafts.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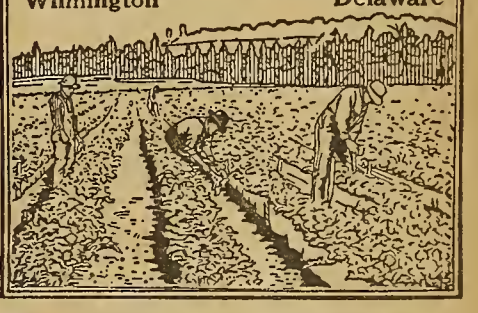

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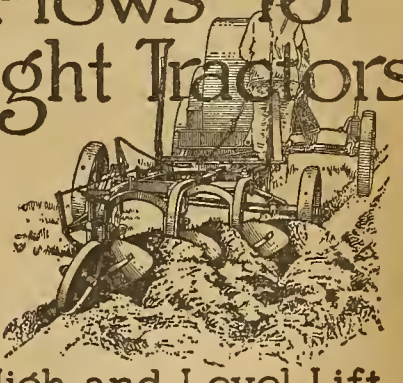
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Garden—Orchard

How the Onion Helped Me

By Thos K. Colegate

MY PARTICULAR problem was to make good on a newly acquired run-down Kansas farm, where a one-crop (corn) system had been the rule.

The onion bee got into my bonnet and I determined to substitute onions for a part of my corn crop. But the weed-foul soil—particularly smart weed—was a poser in which to start and grow seed onions successfully.

The weed hosts would arrive just as the onions were breaking through the soil. The absurdity of attempting to produce onions with ordinary culture under such conditions will be evident to anyone who has tried to grow onions from seed.

I made my attack by clearing off the cornstalks from corn stubble with a hay rake, and harrowed the unplowed surface until it became smooth. A week later I found the smart-weed and crabgrass seed well sprouted, and the harrow was set going again to kill the weeds that had germinated. A little later I plowed the land three inches deep and harrowed it again thoroughly. After a rest of ten days I found lots of weed seed sprouting vigorously. Again I plowed the land about six inches deep, harrowed it thoroughly, and planted onions in checked rows 10 by 14 inches.

Onions Were Check-Rowed

The checking was easily done with a T-shaped marker 6 feet long. On the cross-piece I fastened inch-square legs, 6 inches long and 14 inches apart. The marker could be easily dragged by hand and marked five rows. After marking one way I changed the marker legs to 10 inches apart and marked the rows cross-wise. The checks of the little furrows made by the marker were just about the right depth for planting the onion seed. I dropped about a dozen onion seeds at each check, covering them with my foot. This took longer, of course, than if I had used a drill, but the gain in keeping the onions clean, later, was decidedly in favor of the greater expenditure of labor earlier.

My crop was grown on just common Kansas upland soil, no manure or fertilizer being used. I was able to complacently observe the young onions arriving at the checks on the foul soil destitute of weeds at the critical stage in a seed onion's life. Anyone who has attempted to clean young seed onions of weeds when they are planted in drills will understand the advantage of having them in check rows. Then weeding is a less serious matter when there are spaces between each hill.

I thinned each hill to about four onion plants, and when matured they averaged about three onions, three inches in diameter, to a hill. The variety was the Prizetaker.

The disked land, similar in quality, planted to corn and cultivated by the usual methods followed in Kansas, suffered severely from drought; but among the onion rows there was always plenty of moisture, no matter how dry the weather. This moisture saved the day and insured a profitable crop.

Corn Followed Onions Well

The next year I planted my onion land to corn, and followed the usual method of cultivating. From the start, the corn planted on the onion land was more vigorous than that adjacent. The weeds were fewer but exceptionally sturdy. As the season advanced, the boundary of the onion field could be distinctly noticed by the deep green of the corn leaves and its greater height. It also showed marked ability better to endure the dry weather.

No doubt some of the pests that infest the corn roots perished for want of a host when the land was in onions. Probably all of these factors stimulated the growth of the corn, for the yield was more than double than on the adjacent land, and the quality was much better.

My experiment with onions, even though limited to a small area, has made me a convert to intensive cultivation, and to the benefits that may follow getting out of the beaten track.

Among these changes are the disking before plowing to insure the germination of weed seed. This is to be followed by double plowing when practicable—first shallow, then more harrowing, and finally deep plowing—in the preparation of the seed bed.

This plan insures a deep furrow slice that is entirely pulverized, and makes a perfect feeding ground for the plant roots. Soil thus handled is not much more expensive for preparation than where one plowing and after-preparation is the rule. None of the operations are heavy or difficult, and each paves the way for the next. The seed bed is far and away more thoroughly fitted for rapid and continued growth of the crop, and the soil is drought-resistant to a degree beyond my expectation.

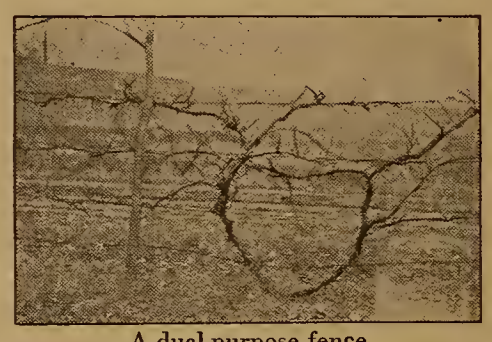
Last, but not least, the rotation of crops is the surest and easiest means of controlling those insect pests and plant diseases which are the bane of careless culture, and which generally go with the one-crop system.

Neat Farm Boundary

By M. R. Conover

A FARM FENCE that pays the farmer above its cost appeals to most of us. Such a boundary fence is maintained by a fruit grower in my locality of New Jersey. His fruit farm is almost surrounded by highways. Grapes and pears are his specialty.

A wire fence of strands of stout twisted wire, supported by stout posts, forms a trellis for grapevines. A grapevine is set in the middle of the space between each post. Arms or canes were trained in opposite directions on each wire, there being as many pairs of arms as there are wires on the fence. After each fruiting season the laterals are cut back to spurs of one and two buds each.



A dual-purpose fence

This fence is cultivated regularly on both the inner and road side, and fertilized equally with the vineyards. It is very sightly in the early summer with its trim, tender young growth and freshly stirred soil, and of course its appearance is very attractive when its load of purple fruit is ripe. Then it serves to shield the inner vineyard from marauders. Even so, this kindly defensive does not suffer to any extent from hungry wayfarers, though hordes of summer pleasure seekers are within a mile and a half of the farm.

Getting Good Seed

By Harry B. Potter

"IT IS a time-worn but none-the-less true saying that good seed is essential to good agriculture. No matter how well the farmer prepares his land, no matter how much time, labor, and money he spends on it, if much or all of his seed fails to grow he will either have a poor crop or be obliged to reseed, thus losing time and labor."—COBURN.

And Mr. Coburn might have added that time and labor are money with the farmer as with other folks.

In order to get good seed one must know, and then apply the tests to see, whether the seed that he saves or buys is what he desires. Good seed, whatever else it may do, should grow, and grow well; and then it should produce high yields of the variety of crop needed. Elsewhere in these columns is a description of one way to test seeds to find out before they are put in the seed bed whether or not they have the qualities of germination. It pays to find out these things ahead of the planting season.

But as to the variety of seed, that is another question. Few seeds can be recognized at sight as belonging to one variety or another. Some oat varieties have characteristics which show in the seed, but an experienced oat man may be misled even with such varieties. To tell the variety, the crop must be planted in the field and the harvest noted. But if seed is purchased for the first time the purchaser must take the word of the seedsman. Most seedsmen are reliable, out for fear some of them are not, get a guarantee as to the variety. That is, of course, if you are sure what you need for your conditions.

These words of caution are given because some may think that the type of crop grown has very little to do with the success of the harvest. If you are not sure, tell your conditions to your seedsman and let him use his judgment as to what to send you, or write to your experiment station for their advice.

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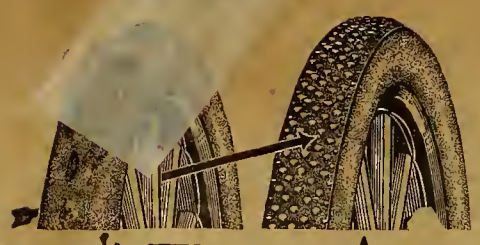

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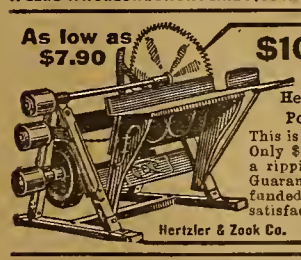

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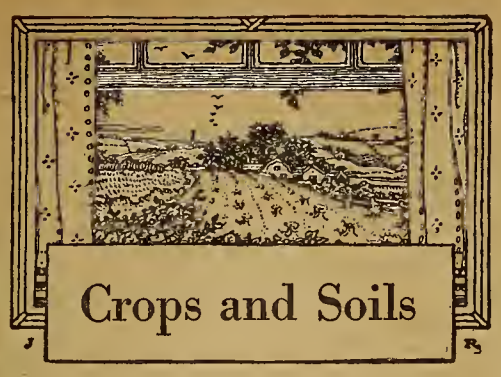

Crops and Soils

Strong Seeds Grow

By Harry B. Potter

SEEDS that grow are seeds that have strength in the germ. That strength may be determined by applying the germination test to samples from the lot one expects to use.

So much emphasis has been placed on the testing of the seed corn each March that other seeds are forgotten. Other seeds should be tested too. Even the fine grass seeds may be tested with satisfaction. Especially should the clovers and the alfalfas be tried out in a small way before seeding time.

Two methods for testing the small seeds such as timothy, orchard grass, clovers, and the like vary only in the material used to keep the moisture near the seeds. Sometimes blotting paper is used, and at other times cloth. Two plates are taken and a sheet of the blotting paper put on each plate. The two papers are moistened quite a little. There is no way of describing the exact amount of water to use. Upon the one blotter place the seeds to be tested. These seeds will have been counted, of course. The other blotter and plate are inverted over the first, and if the papers seem too dry more water is added, but through the blotter, never directly to the seeds. Warm water is best. The plates tend to hold in the moisture, but they should be examined every day until the test is finished, for fear the blotters do get too dry.

Some of the small seeds will require ten to fifteen days for the test. Others of the larger seeds will respond in three to five days. Then the blotters may be separated carefully and the number of seeds that have sprouted may be counted. With some seeds, particularly among the grasses, one shonld not expect a high germination. Most of the larger seeds, seeds the size of the pea and larger, should sprout near 100 per cent. But before testing, one should study the seed catalogues and other reference books on seeds to find out what to expect from the test.

In making the test it is best to count out even hundreds of the seeds. Then when the results are known the percentage is easily estimated without pencil figuring. For example, if 200 alfalfa seeds are placed between the blotters and when the test is finished 66 have germinated, one knows that 33 per cent of the seeds are good. In other words, 33 per cent of the alfalfa seed, when placed in the soil, will grow. We come to that conclnsion because when the seeds received moisture from the blotters, and had the warmth of the living room about them, only that many started to grow. Such a test is not accurate to the finest point, but it is so good a test that one can rely upon it with confidence.

The writer has had difficulty, when testing out seeds snch as the grasses, where much time is required, in preventing mold from forming. However, it was found that a weak solution of formalin (two teaspoonfuls of formalin in a glass of water), if used over the blotters and over the seed, would prevent much of this difficulty.

147,000 Crop Reporters

COMPILING the government crop reports is the chief work of the Bureau of Crop Estimates of the U. S. Department of Agricultnre. The paid employees of this bureau number only 151, many of whom are clerks. The actual fignres come from 147,327 volnnteer crop observers, most of them practical farmers. In return for their service these men have their names on the government mailing list and receive a considerable amount of nseful literatnre.

This year additional attention will be paid to truck crops, of which the Bureau is making a special investigation.

Prairie Dog Travelers

THE most satisfactory method of destroying prairie dogs on the Western plains is with poisoned grain. The Government now has a process of poisoning oats whereby the bitter taste of strychnine is largely overcome, and with this bait abont 95 per cent of the prairie dogs in certain Western grazing districts have been killed. Most of the work has been done in Colorado, Arizona, Montana, and Oklahoma. Prairie-dog villages have gradually occnpied vast areas of valuable grazing lands, and the work of extermination is largely for the benefit of the stock industry. The average cost of poisoning has been about five cents per acre, and of repoisoning the same land to keep it free from the pests about three cents per acre.

Contrary to general belief, prairie dogs if unmolested travel widely, and sometimes start new colonies five miles or more from the nearest inhabited prairie-dog area.

The work of repression is being carried on under direction of the U. S. Biological Survey.

What Loam Is

ALL soils came originally from rock. The chief difference between sand and clay is that clay is very much finer in the size of its particles. Loam is a mixture of sand and clay. An ideal soil to work is a loam made up of equal amounts of clay and sand. Because a soil is loam does not mean that it will produce good crops. It must also be fertile.

Formerly stump land, this field now raises splendid crops

Cleared 9 Acres for $50

By Ira Pletcher

THE picture shows the main part of nine acres cleared of stumps with 480 sticks of dynamite. Including caps and fuse, the cost was a little over $50.

I consider this one of the best methods because:

1. Dynamite does not tear holes in the ground and mix stone and slate with the soil.

2. It is easy to clean the ground out of the stumps.

3. It tears the stumps in pieces which are much better for piling and burning than are whole stumps.

This picture was taken August 30th.

The two acres of corn which lie just beyond the divide of the hill produced 182 bushels of ear corn. In one section of the best part of the field I husked at the rate of 133 bushels of ears per acre. On these two acres alone I dynamited 170 stumps, mostly small pin oaks. In another section of the field there were on one acre about 20 large white oaks from 2 to 2½ feet in diameter. Although the timber had been cut twelve years, some of the roots still had the bark on and seemed to be preserved in the subsoil.

In raising specially cultivated crops like corn or potatoes a large amount is destroyed by working around the stnmps. Therefore get them out of the way if you want to farm.

To Judge Alfalfa Seed

THE best alfalfa seed is a clear golden color, plump and heavy. Immature seed is greenish, and bleached seed is a dull brown color. The color, however, does not alone tell if the seed is good.

A good way to test alfalfa seed is to put some between wet blotting papers in a warm room. Good seed will show 85 per cent germination, or more. This means that about five seeds in six will germinate vigorously. Sometimes you will find a strong germination in a small percentage of the seed, a sign that good seed has been mixed with a low grade.

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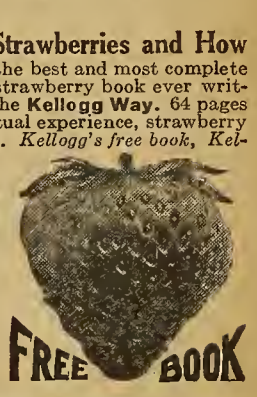

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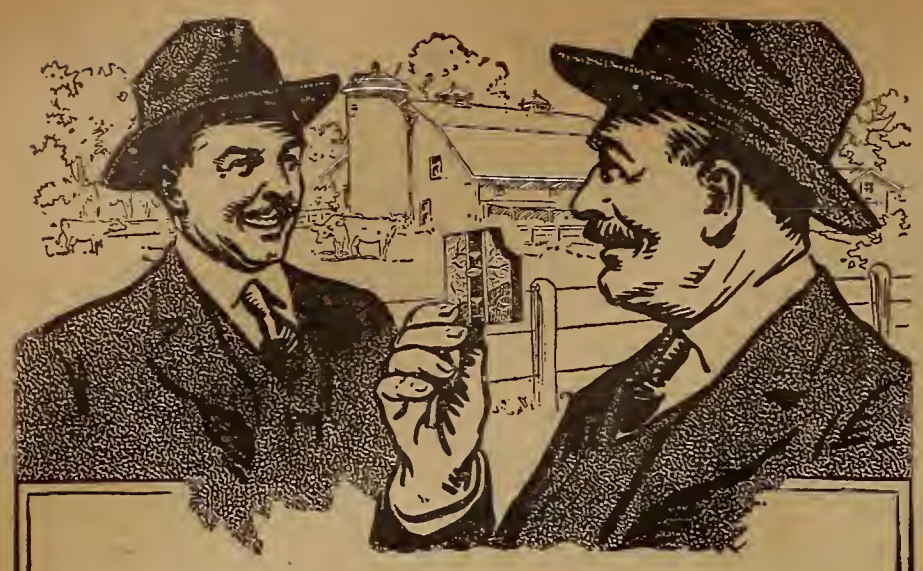

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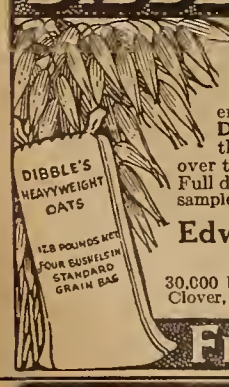

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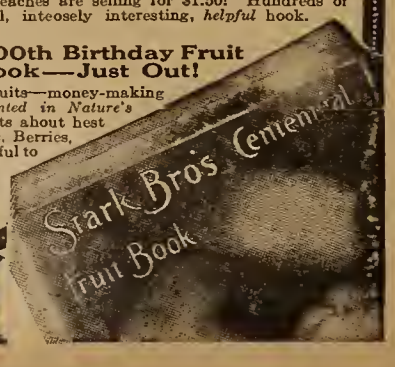


Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

Children's Troubles

ONE of the most frequent accidents that may happen to a child, and one that is very alarming to the parents, is to have the child swallow some foreign substance like a pin, or a penny, or a safety pin. I have known young parents to fly into a hysterical frenzy when their darling swallowed a button. Really there is very little danger. If the object does not cause coughing and strangling, indicatiug that it has lodged in the windpipe, there will be very little cause for alarm. Do not get excited and begin to give emetics or physics. Just leave the child alone, except to encourage it to eat as much as it will of potatoes and such victuals that make much waste in the bowels, and in about forty-eight hours it will pass without difficulty. Be sure to watch and examine the stools. The satisfaction of finding the article relieves you of much anxiety. I know a couple of physicians that exhibited at a medical society open safety pins that had been swallowed and passed without difficulty by children. During my professional life I could have had quite a collection of round, square, triangular, and elongated objects.

Another habit, near akin to the habit of swallowing needles and pins, is that of children introducing beans, grains of corn, or other objects up their nose. Here again we wish to insure young parents that there is no great occasion for alarm. Such objects do very little harm in the nostrils, unless the child should suck it into the windpipe, which is quite improbable. In former years I have spent mauy strenuous minutes in a poor light trying to extract with a pair of forceps a foreign object from the nose of a frightened, nervous, wriggling child. Since that I have adopted the simple expedient recited below, and now I have no further trouble.

A lady residing in the country called me up late at night and told me in an anxious, agonizing voice that she wanted me to come at once, as her baby had a grain of corn in its nose. I told her it would not be necessary for me to come if she would do as I bid her. She said the corn was in the left nostril. I told her just to lay the child down on the bed, on its back, compress the right nostril with the finger; then, as the baby cried, place her mouth over the baby's mouth and blow hard. In another moment a happy, joyful voice came ringing over the line: "Doctor, we got the corn. It's all right, and you don't need to come."

Thus I lost my $5 fee, but made a happy mother.

This is not a very elegant or perhaps sanitary plan, but I assure you it is speedy and effectual.

Disturbing Dreams

Is there anything that will relieve me from dreaming at night? This may seem a very simple question to ask; but, really, it is very annoying to me. I am sixty years of age, and take plenty of exercise and eat light suppers. O. R. T., Indiana.

WHEN sleep is perfect and profound, dreams that are remembered afterward do not occur. Dreaming is therefore a morbid symptom, although a trivial one of minor significance. Prolonged mental or physical strain, excitement, and worry predispose to it. Farinaceous foods, excessive use of coffee, liquor, or tobacco—all have a similar tendency.

The treatment of morbid dreams must be directed toward the removal of the cause. A change in surrouudings is sometimes necessary. Sometimes ten grains of bromide of soda at bedtime will be sufficient if the patient is slightly nervous.

Chronic Malaria

THE following interesting letter describes the effect of malarial iufection. Read it carefully:

"We moved down here last February from Michigan, and all the family was down with malaria last summer. I used as high as twenty grains of quinine a day while I had the fever, and have used eight to ten grains a day at times since, but not regularly. I seem to have got the fever out of me, but now I have a weak stomach. I am working pretty hard clearing land, and my stomach does not trouble me while at work, but my evening meal does not seem to agree with me. Neither do my Sunday meals. If I eat fatty food, it belches up bitter aud greasy. If I eat canued fruit for dessert, it sours on my stomach, and I have a feeling of wautiug to vomit that wakes me out of sleep sometimes. I am very irritable, losing my temper at slight provocation, aud causiug me to feel ashamed of myself afterward. I have a good appetite and enjoy my meals. I have always attended to regularity of bowel movements.

"I have noticed that in hot weather, when I perspire a good deal and drink plenty of water, I feel better and my stomach does not object to food at meal time. I have lost considerable weight since coming here, dropping from 165 to 135 pouuds.

"My wife, who also had the fever last summer, now complaius of cramps in the bowels almost every day, alternating with diarrhea and biliousness. We are attending to our duties, but we are not in the right condition, and any advice you can give us will be thankfully received.

"One of my boys is now being treated by our physician for a prolonged case of malaria. I have spent more money for medical advice since we came here than in all the fifteen years since I was married."

Answer: We do not know just where the town you live in is located, but we would hazard a guess that it is in the region of small inland lakes where mosquitoes abound, especially the Anopheles, the malaria-carrying mosquitoes. They bite at night, and it takes extra precautions for protection. Have your house thoroughly screened and protected from them.

How about your driuking water? Do you driuk surface water? Collect good, pure rain water and drink that. Take two to eight grains of quinine duriug the day and use plenty of laxatives and a good dose of calomel occasionally. During warm weather, when you work hard and perspire much, you eliminate the poison, but when you don't you suffer.

You might take from three to five graius of calcium sulphate each day until your system is saturated with it and the mosquitoes will not bite you. Try this next summer. I am sure you will be much better.

Too Active Kidneys

What is the best remedy for too active kidneys? I also have a high fever every morning. M. G., Arizona.

FREQUENT urination is usually caused by some abnormality of the urine, either too concentrated or containing an excess of uric acid or urates (lithuria), and the presence of irritating substauces. Your morning temperature would indicate that there are poisonous toxins in the stomach and bowels, due to faulty digestion.

You should take one or two cascara cathartic (Hinkle formula) every night, followed by a good saline laxative in the morning until the bowels and skin are active, thus relieving the kidneys of much vicarious work. For soothing an inflamed bladder and rendering the urine bland, there is nothing better than tea made from buchu leaves, the strength of ordinary store tea, a cupful drunk three times a day.

Possibly Gastric Ulcer

George H. Allen of Michigan says: "I would like to ask you what to do for some disease of the stomach that I am suffering from. I have quite a lot of pain between my shoulders at the back and my stomach is sore. Sometimes I will eat the same things that caused me pain before, and they do not hurt me. Often I have the most soreness when there is nothing in my stomach.".

IF THE treatment of the doctors for catarrh of the stomach has failed to relieve you, it is barely possible that you have gastric or duodenal ulcer. The pain in the back, especially if it is limited to a very small area, and the fact of the soreness and pain being worse when the stomach is empty would point that way. Your diet should consist of beef gruel, peptonized milk and buttermilk.

You should take a teaspoonful of Carlsbad salts in a glass of water before breakfast, and 30 grains of bismuth subnitrate after meals.

Do not feel that your case is beyond relief, for it is not.

...ie Septic Tank

W... ...s and How to Build a Good One

By GEO. B. LAKE

EDITOR'S NOTE: Dr. Lake is an authority on rural hygiene and sanitation. He was formerly on the lecture staff of Purdue University and is now engaged in public health work at Jolo, Philippine Islands.

MANY of us who live in the country are planning to equip our houses with individual water-works, with a bath and closets, but are deterred by the fact that we do not just see how we are to take care of the waste material which will be produced by these arrangements.

We face the same problem that is faced by the city sanitarian—namely, the disposal of sewage. Now, sewage is not entirely, nor even chiefly, composed of excrement. It is, in reality, a large quantity of dirty water, polluted by a relatively small quantity of excrement, but none the less very thoroughly polluted. It is this large quantity of water we must dispose of.

The usefulness of the septic tank rests on the fact that there are certain forms of bacteria found in all sewage which grow only in the absence of air, and which have the power to change the foul and dangerous materials present back into the gas, water, and harmless mineral salts of which they are composed. This process is one of fermentation.

In order that these bacteria may do their work, the sewage must stand for several hours, preferably twenty-four, shut away from the air.

The septic tank, then, is simply a water-tight and air-tight chamber of such size that it will contain as much sewage as will be produced in twenty-four hours by the family using it, so that the material in it will be sure to stay long enough to be changed and purified. The quantity of sewage produced by a family will vary considerably, but the capacity of the tank should never be less than 50 gallons for each person using it.

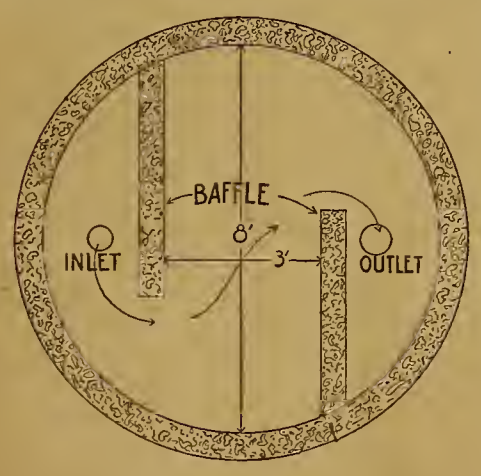
There are some parts of the sewage, such as vegetable fibers, which are not changed by these bacteria, but after the rest of the material is removed they are no more obnoxious than sawdust, which they resemble in composition.

Some of this fibrous material settles to the bottom of the tank, forming what is called "sludge," and some "scum" rises to the top, shutting out the air very effectively. When it becomes neeessary, once in a year or two, to remove the accumulations of sludge and scum, these will be found no more unpleasant to work with than peat.

Serves Family of Average Size

When the farmer has decided to put in a plumbing system, and the work is under way, he should proceed with the construction of a septic tank to take care of the sewage. The arrangement shown will serve a family of average size. Very large families—ten or more persons—will need a tank slightly larger.

The tank is best built of eoncrete throughout, but may be constructed with a concrete bottom and brick walls if more convenient. In that case the walls must be laid up in cement mortar, and coated,



View from the top, showing how the baffles compel the slow movement of contents of tank

inside and out, with the same material. The capacity of this tank is, roughly, 900 gallons.

The inlet pipe should be slightly smaller than the outlet, and set at a slightly higher level, and both should be provided with elbows to go below the surface of the sewage, as shown, so that the scum may not be disturbed, and so that no gases can pass back from the tank into the house. The elbows must not be omitted, lest solid parts of the sewage escape at the outlet and destroy the usefulness of the tank.

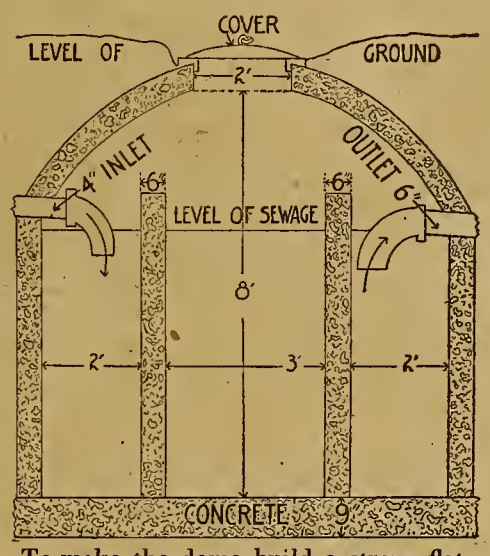
The inlet pipe is connected directly with the soil pipe from the house (the elbow forms a trap), and the cellar drain and overflow pipe from the eistern may well be made to empty into it. Nothing but toilet paper should be used in the closets, and no trash or solid material should be allowed to enter the tank.

The outlet pipe should be continued with six-inch farm tile, laid three or four feet below the surface, and may lead into a ditch if one is available, or, if not, it may be used to irrigate a sandy or loamy field.

Can Arrange Tile Two Ways

If the outflow from the tank is to go into a stream, the joints of the tile should be tight; but if it is to be used for underirrigation, they should not be closed, as the fluid is expected to trickle out, little by little.

The fall for the first 50 feet from the tank should be sharper than it is further



To make the dome build a strong flat platform on top of baffles, pile dirt on it in dome forms, smooth it, and then lay concrete. When concrete is dry, remove the dirt

on, so that the soil nearest the outlet will not get an undue proportion of the fluid.

The tile may be laid in the shape of a Y, with two or more branches, so as to distribute the fluid as widely as possible. In this way it will not only take care of the sewage but also serve a useful purpose in keeping a lawn or garden moistened and fertilized.

If the soil is heavy and not likely to be able to take care of all this fluid, the pipes should be laid in a large diteh filled with coarse sand or fine gravel. Thus sufficient distribution can take place to make the operation of the system safe and efficient.

The outflow from this tank is as elear as water and without unpleasant odor, though it is not entirely free from bacteria. For this reason it should not empty into any stream that is used for drinking or other domestic purposes.

If the outflow pipe is used for irrigation, the tile should be taken up every spring and relaid 30 or 40 feet from their former location, so as to give no ehance for the soil about the drain to become sour.

One hundred and fifty or two hundred feet of pipe will take eare of the outflow from this tank, but more may be used if desired. The drain should be laid where there will be no danger of seepage into the well.

The tank should be not less than 30 or 40 feet from the house, and the top should be at, or slightly below, the level of the ground, and covered with a tight-fitting cast-iron manhole cover.

The partial walls, or baffles, shown in the figures insure the thorough mixing of the fluid in the tank, and a slow rate of flow from inlet to outlet, so that the sewage will stay in the tank long enough for it to become thoroughly dissolved.

An arrangement like this, used by the average family, will require cleaning only once in a year or two. It can be built for about $50. which includes both material and labor, and will give satisfaction for many years.

THE Cattle Raisers' Association of Texas is the largest organization of cattlemen in the world. It has 3,200 members who own nearly 2,000,000 cattle. It was organized in 1877 to check the raids of cattle thieves.

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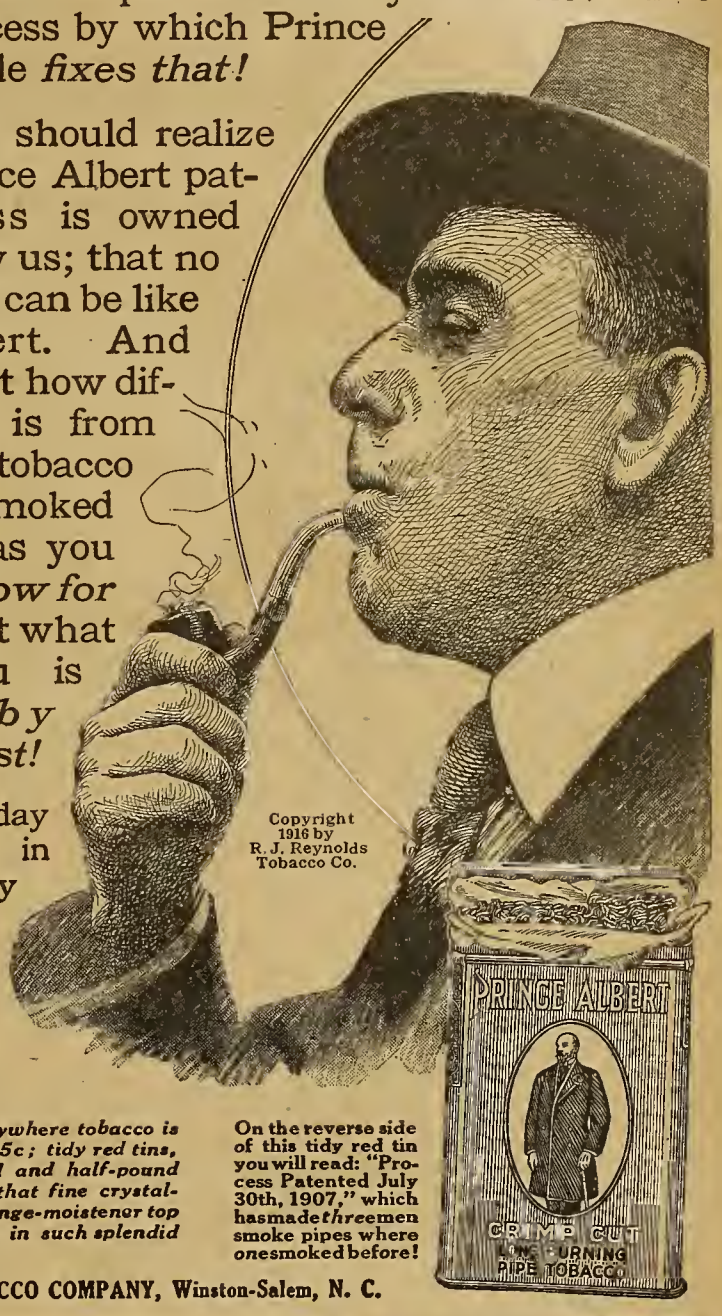

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On the reverse side of this tidy red tin you will read: "Process Patented July 30th, 1907," which has made *three* men smoke pipes where *one* smoked before!

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Paula of the Movies—A Love Story

By EDWIN BAIRD

PART ONE

She was fonder of Mr. Sam Llewellyn than she cared to have him know

SAM LLEWELLYN first conceived the idea of becoming a photo playwright when he saw Paula Hunt in "The Spangled Slipper." This was a three-reel feature film depicting fashionable life in New York; and Paula, enacting the rôle of a gay débutante, met all manner of exciting adventures in the frivolous whirl, and was wholly fascinating in all of them.

Sam left the Star Theater that Saturday afternoon as one in a trance. It was a glorious day in late October, but of this Sam took no note. For a matter of forty-five minutes Sam had lived in a fairyland of glitter and wealth and luxury, and the spell was on him still. In especial his mind dwelt on the enchanting Paula, of whose beauty too much could not be said.

Sam, in fact, was madly, hopelessly infatuated with Paula, and he thought his infatuation was love. He also thought—and this gave him sadness—of the remote possibility of his ever seeing her except on the cinema screen. She was as far removed from his sphere of life, so he reflected, as the most distant star.

He began suddenly to feel a definite dislike for his life as a farmer's son. He contrasted that life with hers, filled, as he supposed, with brilliant pomp and gaiety, and was depressed anew.

But presently, homeward bound in the family phaëton with his mother and father and little sister, his depression vanished like mist before the sun. A gorgeous idea had struck him: he would write a photoplay!

Thus, while the carriage rolled on between the Illinois cornfields, golden with pumpkins and the setting sun, Sam devoted his imagination to a series of sketchy episodes, all bearing a pointed resemblance to those in "The Spangled Slipper." His mother, naturally, was puzzled no little when, having asked him how he liked the movie show, she received this preoccupied response:

"By George, I'll do it, too!"

She was further perplexed after supper that night. Sam, on rising from the table, announced in the most casual way that he had changed his mind about going to the Hallowe'en dance at the district schoolhouse to-night. He would stay home, instead.

"Stay home!" exclaimed his mother. "Why?"

He made a great ado in placing his chair against the wall. "I—I've a little writing to do."

"Letters, you mean? But why not wait till to-morrow?"

"I don't like to put things off," he said mysteriously, moving toward the living-room. "Besides, I'm not crazy about going to that dance anyway."

"Miss Dwyer will be there," observed Helen, his twelve-year-old sister; but he only smiled, rather cynically too. There had been a time—and not long ago, either—when he accounted Bessie Dwyer one of the prettiest and most winning girls he knew; and his pronounced fondness for her society had even given birth to reports that they were betrothed. How different now! How commonplace seemed Bessie beside the amazingly beautiful Panla Hunt, whom presently he was to know, if all went well.

Even when Helen called after him, "George Peters will be there too," he suffered no discomfort. It was generally known that young Peters also found Bessie attractive, but this failed to irk Sam now.

In a little while he was in his room, the door locked, the lamp lit, and a pad of paper before him on the table. He did not, however, immediately begin to write. Instead, he sat absently fingering his pencil, his rapt eyes fixed on vacancy, while his fancy soared away with him in the pleasant business of constructing air-castles. He saw himself a celebrated writer of scenarios, mingling with other celebrities and living in the gilded opulence which, as he imagined, surrounded Paula Hunt. He pictured himself as Paula's friend, then as her intimate, and then—he halted here for a moment, but went steadily ahead with the picture—as *her husband!*

Mrs. Llewellyn knocked on his door and tried the knob. "Sam, are you still determined not to go to the dance to-night?"

"I'd rather stay home, Mother."

He heard her move off down the hall, voicing her perplexity to Helen; then he applied pencil to paper and wrote: "THE QUEEN OF SOCIETY." It was, he believed, quite the right title for her. If *she* wasn't a queen, who was?

He experienced some difficulty in continuing; but after considerable gnawing at his pencil, agitation of his hair, and shuffling of his feet he began; and when his family returned from the dance he was in a fine frenzy, leaning on his left elbow, fingers in his hair, his pencil traveling furiously across the paper, finished sheets of which were scattered on all sides now.

Hearing a door close down-stairs, he paused and promptly extinguished his lamp, and sat very still in the darkness, listening. He sat thus until assured the others were in bed; then he relighted the lamp, and in two minutes was writing as violently as before.

When next he stopped his task was done. The net result was a crude collection of incidents, devoid of plot, and dealing extravagantly with people of vast wealth and unlimited leisure; but he, in his exaltation, believed it a masterpiece of dramatic action.

At breakfast next morning his mother remarked that Bessie and young Peters had been much together at the dance last night, and both apparently in happy spirits. Sam's failure to show any trace of regret or jealousy puzzled her afresh.

She looked at him narrowly, curiously too. "Whom did you write to last night, Sam?"

He managed to side-step the question, keeping his great secret intact. Directly he had finished his morning chores he started horseback for the Aurora post-office, for he didn't care to reveal just yet, even to the R. F. D. postman, that he had become a scenario writer overnight. Besides, he wanted to see "The Spangled Slipper" again.

This second sight of Paula, moving so gaily in her brilliant environment, strengthened his infatuation; and when he saw the ox-eyed leading man embrace her repeatedly and with dynamic passion Sam averted his eyes, unable to bear the painful picture. It brought a sickening lump in his throat.

Later, however, he comforted himself, as he had yesterday, that it was all make-believe, all sham; and he rode home in a pink glow, dreaming of the day when he should know her.

He was planning another photoplay—a three-part comedy, this time, of smart social life eminently suited to Paula—when he met Bessie Dwyer, likewise astride a horse. She had stopped near the creek that wound snakily through the Wright farm, and, outlined now against a grove of oaks all in their autumnal dress, she was a compelling picture of lithe grace, vigorous health, and superb womanhood.

Her heavy nut-brown hair and hazel eyes were also pleasant to look upon. She was undeniably good-looking. But Sam, beholding her now, felt no quickening of the pulse. For the first time his heart failed to beat faster in her presence.

Chatting with her there he could not help comparing her to the wonderful Paula, and in this comparison Bessie suffered grievously. She seemed all at once very commonplace, very colorless and insignificant.

"Well," he said finally, "I guess I'll be moving on. Going my way, Bessie?"

She looked at him thoughtfully. She had just mentioned that George Peters had "seen her home" from the dance last evening—and that was how Sam replied!

"No," she said rather spiritlessly, "I'm going the other way." Then she added, gesturing toward some chestnut trees farther down the creek, "A crowd of us are going chestnutting next Wednesday, Sam. Don't you want to go too?"

He had already forgotten her. His mind was devoted exclusively to that three-reel society play. He answered absently that he'd "see about it," then doffed his hat and rode on, planning the opening scene for Reel One.

Bessie, grown suddenly pensive, sat looking after him with a puzzled, wistful look in her eye that seemed to denote she was fonder of Mr. Sam Llewellyn than she cared to have him know.

ARRIVED home, Sam lost no precious moments in applying himself to what he privately termed his career.

By marvelous ingenuity he contrived to keep his family in the dark concerning his mysterious employment with pad and pencil, and on Wednesday morning his second movie offering, entitled "A Social Butterfly," was all ready for Uncle Sam's mail.

Uncle Samuel, however, gained no revenue from that manuscript. In the R. F. D. letter box on this morning the throbbing young writer of motion-picture plays found a bulky envelope bearing the return card of The Okay Film Corporation, Chicago, and, opening the missive, he plucked forth a thing which his imagination had never pictured—a printed rejection slip.

His castle in the air crashed to pieces. He stood in the ruins, dazed.

His stupefaction was swept away by a blazing anger. Panla hadn't seen that play; that he was sure of. He'd trust no more of his plays to the mail. No! He himself would carry "A Social Butterfly" to her.

With no more ado, and without a word to the folks at home, Sam took the next train for Chicago.

He went forthwith to the Okay offices in the First National Bank Building and inquired, with an authoritative air, for "Miss Hunt."

The queenly young woman at the telephone switchboard patted the blond protuberance at the back of her head, and suggested that the famous actress might be seen at the firm's studio on the North Side. But her tone implied grave doubt about that in so far as it concerned him.

Undismayed, he betook himself to the studio, and there he perceived it would be more discreet to approach his goddess indirectly—by way of the scenario editor, say. The noisily talking, restless crowd of men, women, and children that packed the lower hall of the studio building bewildered him a little. He elbowed his way among them, but found none who appeared to have any connection with the Okay Company. Scraps of conversation presently apprised him that these were all moving-picture players waiting anxiously in the hope that they might be "taken on" as "extras."

He opened a door at random—and withdrew at once, closing the door hurriedly. A group of girls who were "making up" at a long mirror had plainly resented his intrusion.

He moved aimlessly back through the talkative crowd, inquired of a short, rotund little man the way to the editor's office, and was directed to a window, where a tired, faded little woman was listening patiently to a shining-eyed mother who was describing with great enthusiasm the talent of her twelve-year-old son in "imitating the movie stars."

Sam repeated his query.

"Name, please?" requested the weary woman behind the window.

He gave his name.

She spoke into a telephone transmitter, and after a minute again addressed Sam: "You'll find Mr. Olliver's office at the head of the stairs yonder; first door to your right."

MR. OLLIVER'S office proved to be an oblong room cluttered with desks, magazines, stenographers, filing cabinets, and clerks. Picking his way through the congestion, Sam came to a busy though affable young man seated at a flat-top desk strewn with current novels and manuscripts. This was Mr. Olliver.

The farmer's son found it increasingly difficult, somehow, to utter Paula's name. He produced his impugned photoplay and laid it on the desk.

"What's the matter with that?" he asked bluntly.

The editor couldn't recall having seen "The Queen of Society," and said so, smiling pleasantly. Now, skipping hastily through the offering, he handed it back with a string of objections that astonished Sam, who, however, refused to believe them. "Trite, unoriginal, plotless," thus spoke the editor in his cordial way.

Sam returned the play to his pocket. His desire to show it, also the second one, to Paula Hunt personally remained unchanged. Shaping his thoughts for the right inquiry, he moistened his lips, and started to speak—

"Ever see a studio before?" asked the editor.

Sam shook his head silently.

The editor called over his shoulder to a nondescript boy of seventeen clipping newspapers at a corner table, "Hey, Mack! Come here!" and when Mack came on the double-quick, "Show this gentleman through the studio."

And so it fell out that Sam left the office thinking better of Mr. Olliver than when he had entered, and with not a word spoken about the renowned Paula Hunt.

And now he was in a great hall below stairs, somewhat smaller than the Chicago Coliseum, but fashioned on the same lines, and all thought of his mission was driven from mind. It was indeed a strange spectacle that met the eye here, not unlike a cross section from a mardi gras.

Never had Sam beheld such a heterogeneous mass of people. Every conceivable type seemed to be represented—black-bearded villains, gray-headed bankers, bediamonded wives of millionaires, ragged girls from the tenements, shabby artists, dapper boulevardiers, cowboys, bandits, soldiers, chorus girls, beggars, doctors, lawyers, farmers, chauffeurs, butlers, *et al.*—and all mingling together in the most utter confusion. It bewildered Sam. He wondered how in the name of heaven they ever got a picture from such a crazy hash.

But presently, beginning to see things in detail, he perceived that pictures were being taken at this very moment. Here was a handsome drawing-room scene, with a smart tea in progress; there was a kitchen with poverty evident, and a frail woman weeping at the bare table because there was nothing to cook; yonder was a prison cell, and a man in stripes filing desperately at the bars, glancing fearfully over his shoulder the while.

It was like a three-ringed circus, and Sam realized that if he was to see anything at all he must focus his attention on one point. Moving on with his youthful guide, he stopped before a "set" in which there were some eighteen players, men and women. Two cameras were stationed here, one to take the scene in its entirety, the other for close-up views of certain bits of action. A director and his assistant were instructing the players in their parts.

"They're just rehearsin'," vouchsafed the boy, Mack. "Wanter move on?"

"Let's stay here," said Sam, observing matters with genuine interest. [TO BE CONTINUED]

EW

You Can Have This Pony

His Name is "Sparkler"

In addition to the pony, I am going to give with him an elegant outfit, consisting of a pony buggy, nickel-plated harness, etc.—a complete outfit.

SEND THE COUPON IN TO-DAY

It will bring you full particulars about the wonderful plan I have for giving ponies to boys and girls who join my Pony Club and display the right spirit.

I Have Given Away More Than One Hundred Ponies and Outfits to My Many Boy and Girl Friends

On this page I show you the pictures of three of them and also give their names and addresses, so that you can write and ask them about it if you wish. I have a big collection of pictures of the other pony winners that I will send you if you send the coupon below. Remember, you will not have to spend one cent to get a pony. I want you to do a little easy work for me in your spare time. I'll tell you all about it when you send in the coupon and join the Pony Club.

Every Boy or Girl Who Joins My Pony Club Is Sure to Receive a Handsome Present

As in addition to the pony outfits I give away lots of other things: Air Rifles, Bracelets, Watches, Dolls, Rings, etc.; in fact, I give a present to every member of the club.

"Sparkler" is a Handsome Little Fellow I Know You Would Be Delighted to Own Him

As soon as you send me your name and address I will send you several pictures of "Sparkler" so that you can see just what he looks like. The big picture above gives you some idea of course, but I have other pictures that are better.

Get Your Scissors

Below I show pictures of three of my boys and girls to whom I have given ponies—I would like to give YOU one too.

This is **Fred Brownsworth, Fremont, Ohio,** and his pony "Dandy." I gave "Dandy" to Fred last summer (1915). He writes me every little while and tells me about the splendid fun he is having

Here we have **Blanche Shull, Washington, Pa.,** and her pony "Major." Blanche also received her pony from me last summer. Pony Buggy, Harness and Complete Outfit went with "Major."

And here we have **Virginia Jameson, Iola, Kansas,** and her pony "Daisy." You can see that Virginia is just a little girl but she got her pony just the same.

1000 Votes for You

To every boy or girl who clips out the coupon and mails it to me right away, I am going to give 1000 votes, which all count toward winning "Sparkler."

So be prompt—**Send the coupon to-day.** It will bring you full information about winning "Sparkler" for your very own.

Get Your Scissors

UNCLE DAVE
Farm and Fireside Pony Man
Springfield, Ohio

UNCLE DAVE

Please enroll me as a member of your PONY CLUB, and send me full particulars regarding your plan. Also send me free pictures of "Sparkler."

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County ..... *State* .....

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E.W

A GOOD CHANGE

A Change of Food Works Wonders.

Wrong food and drink cause a lot of trouble in this world. To change is first aid when a person is ill, particularly from stomach and nervous troubles. As an illustration: A lady in Mo. was brought around to health again by leaving off coffee and some articles of food that did not agree with her.

She says:

"For a number of years I suffered with stomach and bowel trouble which kept getting worse until I was ill most of the time. About four years ago I left off coffee and began using Postum. My stomach and bowels improved right along, but I was so reduced in flesh and so nervous that the least thing would overcome me.

"Then I changed my food and began using Grape-Nuts in addition to Postum. I lived on these two principally for about four months. Day by day I gained in flesh and strength until the nervous trouble had disappeared. I feel that I owe my health to Postum and Grape-Nuts.

"Husband was troubled, for a long time, with occasional cramps, and slept badly. Finally I prevailed upon him to leave off coffee and take Postum. After he tried Postum for a few days he found that he could sleep and that his cramps disappeared. He never went back to coffee." Name given by Postum Co., Battle Creek, Mich.

Postum comes in two forms:

Postum Cereal—the original form—must be well boiled. 15c and 25c packages.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water, and, with cream and sugar, makes a delicious beverage instantly. 30c and 50c tins.

Both kinds are equally delicious and cost about the same per cup.

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Best built—double walls, hot water heat, copper tank. Full equipment—lamp, regulator, thermometer, etc. Freight Paid. Order today on Satisfaction or Money Back Guarantee—or write for literature. We make Brooders, too.
RELIANCE INCUBATOR CO., Box 7, FREEPORT, ILL.

Young's Portable Poultry Houses
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Prices $2 and up
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Get this remarkable incubator bargain. Get *more* and *healthier* chicks out of every 150 eggs because IOWA incubation is *just right*. Smallest attention necessary—heat always uniform. Trouble-proof.
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At our expense. Don't pay a red cent unless the "IOWA" is *worth double*. Hatch with it—know how simple, reliable it is. SAVE *$5 to $10 by accepting our Special Offer!* Our guarantee insures satisfaction.
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Rhode Island Red

White Leghorn

A Poultry Talk

Boys and Girls Can Learn About Chickens

By JOHN Y. BEATY

THERE are so many breeds of poultry that I don't expect you to learn about all of them, but I'll mention four of the most popular breeds, and shall tell you about their important characteristics.

Of course, we look to both egg production and meat production in the selection of fowls. I am certain you kuow that fowls are divided into two general classes accordiug to their use. Oue class is the egg-laying type, and the other is the meat-producing type. You probably have heard your father say that he wouldu't keep White Leghorns because they didn't produce enough meat, or that he wouldn't keep Barred Plymouth Rocks because they didn't lay enough eggs. Well, that was because they represent the two types: the Leghorns, eggs; and the Barred Rocks, meat.

The egg-laying breeds use most of their food for making eggs, aud hence do uot grow meat. The meat-producing breeds are just the opposite—they use their food to make flesh, aud so don't lay so many eggs. Of course, the Leghorus are used for meat too, and the heavy breeds lay a great mauy eggs. People usually specialize in the one or the other, the same as they do with other breeds of live stock—beef or dairy cattle, bacou or fat hogs.

White Wyandottes are a meat-producing type. They are much larger thau the White Leghorus. The Barred Plymouth Rock and the Rhode Island Reds are more of meat producers than egg producers. Even the three heavier breeds have made high egg-laying records withiu the last four years. This has been because the meat breeds have beeu bred for eggs as well as meat.

Names Parts of Chicken

Do you know the parts of a chickeu? The parts marked ou the White Leghorn are: 1, comb; 2, wattle; 3, ear lobe; 4, breast; 5, hackle; 6, saddle feathers; 7, sickle feathers.

The White Wyandotte has a rose comb. There is quite a difference between the single comb and the rose comb, isn't there? The Barred Plymouth Rock and the Rhode Islaud Red both have single combs. There are some breeds that are just alike except the style of comb.

Iu the rooster the comb should be large and a healthy red. In the hen, the color of the comb indicates whether she is laying or not. If her comb is very light colored, you can make up your mind that she is not laying. You know a hen doesn't lay an egg every day. She lays for a while, takes a rest, and then she lays for a number of days and takes another rest. Usually when she is laying, her comb is very red.

The wattle is similar in appearance to the comb, but I don't know of any particular use it has except to add to the appearance of the chickeu.

Cau you find the rooster's ears? Of course you knew that they have ears. Can you mark them on the picture? Of course you can. They are marked 3 on the White Leghorn rooster. The rooster's ears are called ear lobes.

Judge Hens by Appearance

You will notice the hackle is on all fowls. This point is taken into consideration at the poultry shows. At the poultry shows the judges don't have an opportuuity to know the number of eggs a hen will lay, so they have to judge the quality of the chickens by their outward appearance.

The breast on the meat breeds is even fuller than on the egg breeds. There should be a lot of meat on the breast. A bird of the meat breeds doesn't win a prize in a show unless he has a well-developed breast.

A place where the smooth, well-colored feathers count toward a prize in a poultry show is the saddle feathers. I wouder if you could have guessed the name of the sickle feathers if they weren't marked. That is quite an appropriate name because they are shaped like a sickle. These feathers in a rooster should be graceful and regular. In a hen the tail feathers are straighter.

Now I wonder if you can mark all of the parts mentioned ou each of the pictures given here. That will be good practice for you. If you can mark each part and name it on all of the pictures and tell the names of the four breeds given, you have learned your lesson very well indeed.

Notice all of the chickens you see from now on, and apply this knowledge. When you attend a poultry show watch the judges as they examine the birds. Ask them questious if you don't understand just what they consider when they judge a chicken.

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Barred Plymouth Rock

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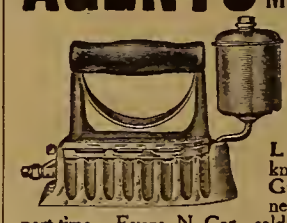

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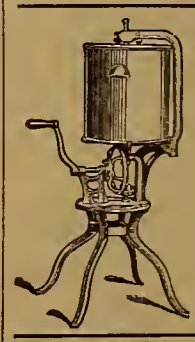

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The Baited Trap

A Story in Five Parts by Edwin Baird

Illustrations by ROBERT AMICK

PART FIVE

WHEN the comedian, after profusely thanking Bob, had finally withdrawn, Annie got her gloves and purse from the dressing-table, switched off the electric lights, and linked her hand around Bob's arm.

"I was on my way to meet Do when you came in," she said. "Now we can go together. Mind your step there! A fellow can break his neck mighty easy in this place."

"I'm sort o' hoping," said Bob as they groped their way through the jungle of scenery, "that I'll learn pretty soon where Miss Sherwood is."

"Well, as I've tried to tell you three or four times, she and Dicky Duval are down at the Union Station buying tickets for St. Louis."

For the better part of a moment Bob's heart seemed to stand perfectly still. They were descending the narrow staircase of the stage entrance, she two steps in advance. When they reached the alley and started toward the street he asked calmly:

"They're both going to St. Louis?"

"We're all going to St. Louis. We closed here to-day—Do and I. We open in St. Louis to-morrow."

"And Duval?"

"His booking is changed too. We all open in St. Louis to-morrow. Dicky's got a mash on Do—"

"I heard that before," said Bob, a sudden sharpness in his voice. "Wait till I get a taxi for you."

"No, you don't!" Annie grabbed his arm as he started off. "Times are too hard for taxis. We'll take a street car, or walk."

In the end they compromised on the Elevated.

XIV

WHEN Dolores heard about the episode of the lost bank roll—and it was the very first thing Annie told her—she said, with a quick glance at Bob:

"Of course he gave it back! It's exactly what I'd have expected him to do."

Bob felt vaguely uncomfortable, but his self-consciousness vanished when Duval, who was leaning on a Malacca cane, beside Dolores, drawled in a supercilious way:

"I fancy you're fearfully lonely in Chicago, Uncle—you're so different from the natives!"

"How soon does your train leave, Miss Sherwood?" asked Bob, pointedly ignoring the ventriloquist.

"We've thirty minutes to kill," said she, consulting her enameled wrist watch.

"Will you give me ten of them, or fifteen—that is," he added, turning to Annie, "if Miss Fisher doesn't mind." He still refused to recognize the actor.

Miss Fisher didn't mind, and he and Dolores strolled off together, and passed from the waiting-room and out into the noisy "midway."

"For some time," he said, as they moved side by side through the crowd of travelers swarming around them in the grimy place, "I've been wanting to ask you about your brother, and this is probably the last chance I'll have. How is he getting on with his farm?" There was a note of half-fearful eagerness in his voice; he dreaded her answer, yet craved it.

She smiled apologetically. "I'm afraid I don't know, Mr. Yates. I haven't heard from Frank lately, and I haven't the remotest interest in farming."

He experienced a sharp disappointment. She had seemed far removed from his life before; now she seemed as unattainable as the most distant star.

"You care more for this play-acting?" he asked dismally.

"Oceans more! I don't believe I could exist on a farm. The dullness would kill me."

"Have you ever been on a farm?" he asked bluntly.

She shook her head.

"Then maybe that's why. Farming isn't dull—not by any means. There's lots of excitement in it. Especially about this time of the year."

"Perhaps you're right," she agreed, though obviously taking small interest in the subject. "You know more about it than I do, anyway. You were born on a farm, weren't you?"

"I was born on the farm your brother owns now."

She stopped so abruptly that a woman walking close behind her with two suitcases crashed into her with an explosive *"Whoof!"*

Bob assisted the woman to her train, handed her suitcases to the negro porter, then returned to Dolores, who exclaimed the moment he was within earshot:

"If I'm not the prize stupid! I knew, of course, that Frank bought his place from a Mr. Yates, but I never imagined—and you're his son, I suppose?" And as Bob nodded: "Well, I declare! No wonder you felt that you knew me! But doesn't Frank ever write to you?"

"He—hasn't yet," faltered Bob, and felt his face burning fiercely. An impulse surged upon him to tell her why her brother never wrote to any member of the Yates family, but sober reflection pointed out that it could do no good now—only harm.

They had reached the southern end of the midway, and as they turned and started back he felt too sick at heart for speech. An ineffable sadness weighed heavily down upon him. In a little while her train would leave, and she would pass out of his life—doubtless forever. And then there was Duval to think of!

"And he'll probably get her, too," ran his painful thoughts, and his brooding eyes rested upon her in pitiable longing. "I guess she was never intended for a clodhopper like me."

He felt clumsy and unpolished beside her. She was so exquisite, so finely poised, so utterly feminine! And he loved her with a fierce intensity that made him ache.

They drew abreast of an iron gate through which a stream of luggage-laden, begrimed wayfarers were pouring from a newly arrived train, and as he guided her through the crush the mere touch of his hand on her arm sent a delirious thrill through him.

When they were safely past he did not release her arm, but said huskily, indicating a vacant bench near the baggage-room:

"Will you sit over here a minute? I—I've got somethin' to tell you."

They seated themselves on the bench, and he turned sidewise, facing her; but he found it difficult to meet the honest inquiry in her dark eyes. His gaze shifting, he said stumblingly, his voice trembling less from nervousness than from passion:

"I guess I oughtn't to tell you this, seein' it won't do either of us any good; but I'm goin' to tell you anyway, and when I'm through you can do whatever you're minded with me."

Having thus broken the ice, he plunged headlong into the story of his love for her, starting at the beginning of things, when he had seen her photograph in her brother's room, and ending with his emotions a minute ago, when he had thought of her going away from him, accompanied by Duval. After he had finished and sat dumbly looking at her, with the eyes of a dog, she avoided his gaze, for a space, in silence, slowly turning a ring on the little finger of her left hand. Presently she said:

"If you were like some men I know, I'd tell you to 'forget it and be a good sport.' As it is—well, you're different. There's something frightfully honest about you. I can't treat you as I do most of my men friends." She lifted her eyes to him, and he saw they were glowing compassionately. "Of course," she went on, her voice softening, "you can't expect me to give you any sort of answer to what you've said. I scarcely know you, and naturally I haven't thought of you as—in that way, you know."

"Sure; I know," he said thickly, and started to rise.

But she pressed him back into his seat. "Wait! I'm not through. You told me just now I could do whatever I pleased with you. Well"—with an impulsive movement she leaned suddenly toward him, her hands fluttering to his shoulders, her mouth uplifted appealingly—*"I want you to kiss me—Bob!"*

With an indrawn sigh of ecstacy that thrilled him to the depths of his being, and with no thought of the surrounding crowd, who, being used to such sights in railway stations, took no notice of them anyway, Bob drew her into his arms and crushed his lips against her own.

XV

THREE days afterward—events in Bob's life now dated before or after the epochal moment when he had kissed Dolores Sherwood—three days afterward he got a souvenir post card from her, displaying a highly colored view of the St. Louis city hall and two square inches of Dolores' handwriting.

"Write to me often," she had told him in parting, "and let me know how you are getting on." And now the brief message on the post card reiterated: "Write me a nice, long [CONTINUED ON PAGE 34]

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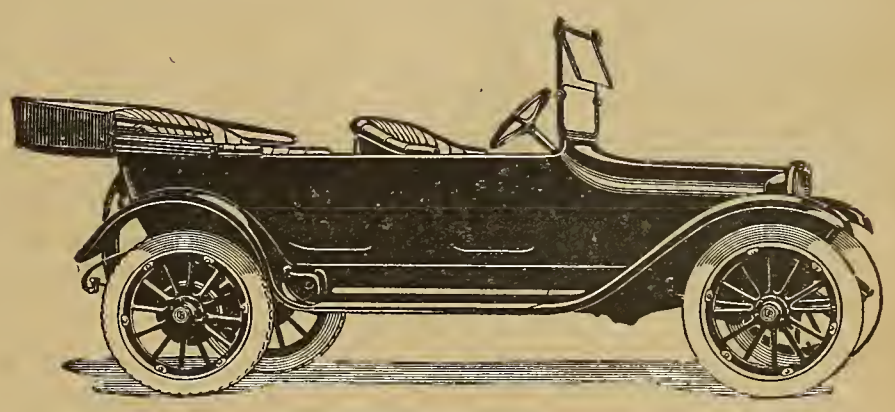

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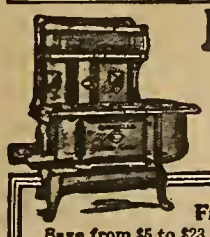

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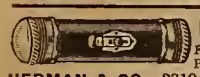

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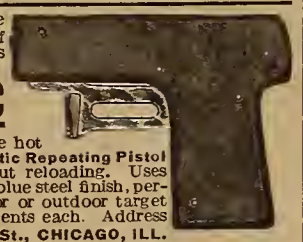

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The Baited Trap—By Edwin Baird

[CONTINUED FROM PAGE 33]

letter and tell me all about yourself."

He wrote a long one forthwith, consuming upward of two hours in its composition; but when he read it over he decided it was anything but "nice," so he wrote another, likewise laboriously. At length he finished one that pleased him moderately well, and this he directed to her at the Sixth Street vaudeville house where she and Annie, and Duval, were playing.

A week later he received a post card from Kansas City, on which she expressed surprise and disappointment over not having heard from him in St. Louis. Believing his letter had miscarried in the mails he wrote to her again, addressing this epistle to her hotel.

He next heard from her in Topeka—a hastily scrawled note on a sheet of hotel stationery. She had been delighted to get his long letter. It made her want to see him. The sketch was going to the bad. If it wasn't for Annie's never-failing high spirits she'd be feeling awfully blue.

Such was the gist of the note which ended: "Please write me at Omaha, in care of the Tivoli Theater."

He did—and never got an answer.

Three weeks passed, and he had a card from her, bearing the Los Angeles postmark and these disquieting words:

Why haven't you written? You've disappointed me terribly. The sketch blew up in Denver. Annie and I are playing in a musical show at the Palmetto Theater, this city. Won't you please write me one of your nice, long letters?

N. B.—Dicky Duval's in the show too.

Bob was glumly perplexed. That one of his letters should go astray was no vast wonder, but that it should happen twice, and in such rapid succession, was surprising indeed. He had read somewhere that "lost" letters were extremely rare in the Post-Office Department—one in every 300,000, or something like that—and it seemed incredible that his two letters should be the fated ones in such a mighty number. Her line about Duval heightened his torment.

He sat down immediately and wrote to her, directing the letter to the Palmetto Theater. A month passed, bringing no reply. Then he wrote to her again, writing "Please Forward" on the envelope. After another fortnight of silence he wrote a third time, placing his name and address in the upper left-hand corner of his envelope. The second letter was returned by the Dead Letter Office in Washington, the third came back from the Los Angeles post-office, rubber-stamped, "Uncalled For," and from this he deduced that his first letter, unless lost, must have been delivered, else the postal authorities would have returned it to him.

He construed her silence variously, his most harrowing construction being that she had married Duval and forgotten the big-boned farmer's son she had met in Chicago. On his next visit to Peoria he went to her aunt's home, with the hope of learning something definite, but her aunt had moved away—"Gone to California," the neighbors said. Nobody knew her address.

He tried the Chicago booking agencies next, and then the dramatic publications—and learned nothing except that she had left the stage. Beyond this meager information, and it was mostly hearsay, nobody could tell him anything about her. She seemed to have dropped quietly out of sight.

He thought of communicating with her brother, but the aversion to doing so now, after the long intervening silence, was stronger than the pleading of his heart; and he gave up thinking about it, as he had done many times before.

AT LAST he resolved to forget her. His love, he reasoned, was quite futile anyway. Then, why torture himself by brooding on what might have been? Thus argued his practical side. The sentimental part of him counseled differently.

The summer waned into golden autumn, the autumn withered before the frigid blasts of winter, which, in its turn, was melted by the warm breath of spring—and Bob's logical resolution became a sturdy thing. Time is the sovereign healer of all mental wounds.

But there was one thing he never forgot, and never would. No passage of time, however great, could erase the memory of that heavenly moment when he had held her in his arms and kissed her.

In the summer of that year Bob quit the street railway people, with whom he had risen to a position of some importance, and went to work for a commission merchant in South Water Street. This was more to his liking at that time, and the decrease in his income gave him scarcely more than a passing twinge.

Since the first budding of spring he had been conscious of a growing distaste for the city and a recurrent longing for the country, because he came of a race of farmers and the love of the soil was indissolubly in his blood. But the life in South Water Street, although immersing him in a sea of agricultural products, did not appease his craving—it only piqued it. The roar of the city was always in his ears, and he loathed it. The smells, the crowds, the hot streets—all sickened him. He thought wistfully of the green meadows and the cool woods.

When harvesting time came he was on the verge of cutting for the country as a laborer. The idea fascinated him more and more as he recalled the clean, mellow odor of hay yellowing in the sun, the fields of ripe wheat, the loud whir of the threshing machines, the shouts of the workers.

And then, wholly unexpectedly, Fate gave a new twist to his life. It came in the form of a telegram:

Hurry home. Father is dying.

XVI

HIS father had been struck by an automobile (it was the falling of divine wrath, so his mother said, in punishment for his sins), and when she and Bob came to him at the hospital he had, at best, less than an hour to live. With an almost imperceptible movement of his head the stricken man signed to the nurse and surgeon to leave the room, and when they had gone, closing the door behind them, he beckoned his wife and son nearer. Although he summoned all his ebbing strength for one final effort at speech, his voice rose barely above a raucous whisper:

"I'm gonna die, Bob, I guess—I'm all caved in inside—and afore I go I wanter squar' myself with that young feller, Sherwood. I figger I done him out o' four thousand dollars. My insurance is ten thousand. Take it out o' that, Bob, and give it to him. There'll be enough left for you and Ma. Promise me you'll do it, Bob!" The eyes, from which the light was fast fading, were fixed glassily on his son.

Bob nodded, unable to speak.

A look of happiness, almost beatific, overspread the pain-racked features of the dying man. His body relaxed, as if in relief; his head sank deeper into the pillow. He tried again to speak, but could not. His life, now that his final wish was granted, was fast departing. His sunken eyes closed in weary content. With a smothered sob the woman dropped to her knees beside the cot. And the little room knew the silence that is Death.

Within the month Bob was moving along the Wisconsin road that led to the farm he had once called home; and, despite the glad import of his mission, a poignant loneliness sat broodingly upon him. The harvesting was at its height, and the fields, stretching away from either side of the road, were rich with golden grain. The very air was surcharged with peace and well-being, and his melancholy was accentuated. He reflected bitterly upon his blindness in deliberately turning his back on all this. He longed passionately for the old free life of the soil.

He reached his destination—

And stopped short in the middle of the road, with an ejaculation of amazement. He had, naturally, expected to see a house crumbling to decay, broken fences, neglected yards choked with weeds, but he saw nothing of the sort. The farm, instead of deteriorating, had been rejuvenated. From the galvanized iron R. F. D. letter box to the newly painted cupola of the barn, gleaming redly in the sun, the place fairly exuded the spirit of prosperity. And whatever doubt he may have had that this transformation was wrought by Sherwood was speedily dispelled.

He heard a shout down the road that was somehow familiar, and turned to see Sherwood driving toward him in a farm wagon.

"Hello there, Bob Yates! Just in time for dinner. Hop in!"

Bob, vastly relieved by Sherwood's cordial greeting, which obviated any possibility of a strained situation, climbed into the wagon and shook a bronzed hand whose grip was like a vise.

Later, as they walked toward the house from the barn, Bob was still exclaiming his wonder at the rehabilitation of the farm.

"I'd never have dreamed," said he, with a generous gesture, "that the old place could come back like this. If book knowledge did it, then I'm strong for it. Anyhow, you deserve a heap o' credit, Mr. Sherwood."

A shadow darkened the radiant good humor in Sherwood's roly-poly face.

"I'm not so prosperous as I seem," he said quietly. "In fact, I'm not prosperous at all. But I'll tell you about that later on. Let's get in to dinner now."

They turned the corner of one of the new chicken houses and came within sight of a grape arbor which extended from the kitchen steps to the middle of the garden, forming a cool, green bower over the board walk. On a stepladder beside the arbor stood a slim young woman in a gingham apron and sunbonnet, filling a wicker basket with luscious clusters of grapes. Evidently hearing their voices she looked over her shoulder in their direction—and Bob, seeing her face, got his second distinct surprise of that day.

He stopped abruptly, also halting Sherwood by gripping his shoulder.

"Is it possible," he asked in a low voice, "that I am looking at Miss Annie Fisher, the actress, or are my eyes lying to me?"

"Your eyes aren't lying, old man," chuckled Sherwood, "but she's not an actress any more—and her name is not Miss Annie Fisher. It's Mrs. Frank Sherwood, and she's a farmer's wife. We were married last winter. You see, when my sister came home—"

"*Is your sister here?*" cried Bob.

Sherood laughed. "I think I'd better start at the beginning and tell you everything."

But he didn't. His wife, who had hastened down from the stepladder and rushed forward to welcome Bob, told it, instead.

"There's really not such a much to it," she began as the three of them moved on toward the house. "When our Los Angeles engagement ended we got horribly homesick—Do and I. This farm was the only thing like home Do had, and I knew dear old Frank would take me in. We were always good pals," slipping her bare arm around her husband and squeezing him. "Well," she ended, "he did; and Do and I took to farm life like ducks to a summer shower. Do is perfectly crazy about it. You just ought to hear her rave!"

"And Duval?" asked Bob, when she paused. "What became of Duval?"

"Oh, she bounced him, just as I knew she would." After a moment she added significantly, in a quiet, lower tone: "She's got something to tell you about Duval."

They had reached the kitchen steps by now, and Bob's pulse was racing madly. So she was free, after all, and there was a chance for him!—such was the pæan that sang in his mind. And then he became aware that Dolores was standing in the kitchen doorway, looking at him, her left hand pressed tightly to her rounded bosom.

Their eyes met. For a moment neither spoke. But a strange light, pregnant with a wealth of meaning, leapt suddenly from one to the other—and there flashed in Bob's mind a vivid recollection of that instant in the railway station when their lips had clung together.

XVII

DINNER was served immediately, and a most excellent dinner it was, but the flow of words outweighed the feast. First, Bob had to hear about Duval. Since all present, save he, knew of the matter, Dolores didn't hesitate to speak of it at table.

Bob, honest through and through, had never conceived of a villainy which would permit any person to open another's private mail, and yet that was what Duval had done. He had stolen all of Bob's letters addressed to her at the theaters. The only one she has received was the one directed to her in care of the Kansas City hotel.

"I got the truth from the manager of the Palmetto in Los Angeles," she said. "Duval had been in the habit of bringing me my mail, and the manager told me that he had given him a letter bearing a Chicago postmark. I never got that letter, and I knew it was from you. Of course it didn't take me long to see that Duval had been doing the same thing in St. Louis, Topeka, and elsewhere. Wasn't it horrid?

"Well, I wanted to write you at once and tell you all about it, but the trouble was I'd mislaid your address, and I couldn't remember it to save my neck. And Frank—dear old stupid!—couldn't recall it either. He couldn't even remember the name of your landlady."

"Mrs. McNally," put in Bob.

"I wrote you twice," she continued, "in care of the General Delivery, but both letters came back. It's been a perfectly awful mix-up all around."

"But everything's all right now," said Bob, and his broad smile reflected the glow in his heart. Duval's baseness could not diminish that glow. Indeed, if the exact truth were known, it was rather pleasant to reflect that Duval had been so fiercely jealous. [CONTINUED ON PAGE 36]

KNOX Chocolate Blanc Mange

Soak 1 envelope Knox Sparkling Gelatine in ½ cup cold water 5 minutes. Scald 1 quart milk, and add 1 cup sugar, 2 ozs. grated unsweetened chocolate and few grains of salt. When sugar is dissolved, add soaked gelatine; then add 1 teaspoonful vanilla. Turn into mold, first dipped in cold water, and set in cold place to harden. Serve with whipped cream, sweetened and flavored with vanilla.

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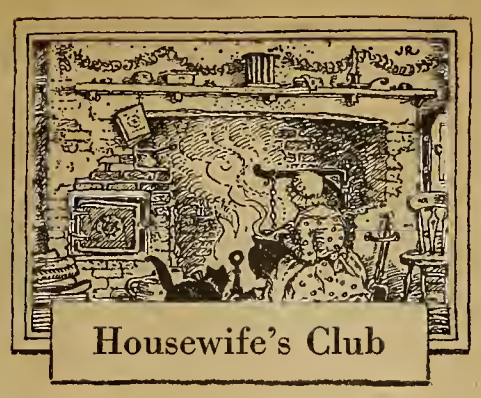


Housewife's Club

George Washington Menu

By Elizabeth L. Gilbert

FOR a Washington Birthday dinner the following red and white menu is effective:

Tomato Soup	Wafers
Roast Turkey	Pea Patties
Sweet Potatoes	Gravy
Currant Jelly	Cranberry Sauce
Pimento Salad	Flag Wafers
Red Gelatin	Whipped Cream Cake

The table should be gay with tiny flags at each place, and some red flowers for a centerpiece.

Have the soup very red, and instead of pickled cucumbers serve pickled cherries as the relish.

The turkey should be garnished with alternate balls of cottage cheese and small red apples.

Serve the cranberry sauce in clear glass sherbet cups or dishes. The salad is made as follows:

One pint of vinegar, one pint of water, one-fourth cupful of sugar, one teaspoonful of salt. Let it boil, and pour it over one envelope of gelatin which has been dissolved in one cupful of cold water. Set this away until it begins to harden. Then stir into it two cupfuls of chopped cabbage, one cupful of chopped nuts, and one ten-cent can of pimentos chopped fine (tomatoes well drained will do). Pour this into large jelly glasses and let it get cold. Serve in slices, with a tablespoonful of salad dressing on top.

The flag wafers are reception flakes colored with fruit coloring to represent a flag; not at all hard to do.

For the last course drain the juice from a quart of cherries, sweeten well, let them come to the boiling point, pour over one package of gelatin already dissolved in one cupful of cold water, and add enough cold water to make the full quart. When partly cold take one half of this and pour into individual molds (cups can be used). The other half, when cold, is to be whipped with an egg beater until foamy. Then fold into it the stiffly beaten white of one egg and one cupful of cherry preserves, drained dry. When ready to serve, turn the clear red gelatin out into white dishes, and pile the pink around it, garnishing with frozen whipped cream. The cake should be any good white cake baked in a loaf. Cut this in squares, and ice each piece all over with pink icing, decorate with nuts and candied cherries.

Serve red and white mints.

Holiday Refreshments

Can you give me some new ideas for simple refreshments for ten or twelve people at a Washington's Birthday party?
G. P., Connecticut.

WHY not serve sandwiches in hatchet shapes and filled with cream cheese and pimentos? With the sandwiches serve hot chocolate and whipped cream, followed with vanilla ice cream in paper cases in the shape of cocked hats. This may be accompanied by small cakes frosted in white, with a candied cherry in the middle.

Fig Pudding — Half a pound of figs chopped fine, half a pound of suet chopped fine, half a pound of sugar, half a pound of bread crumbs, three eggs and lemon flavoring. Mix well, add a little milk if it is too stiff, put into a buttered mold, and boil for three hours.

Drop Cookies of exceptional excellence may be made without eggs, and with very little butter. One cupful of sugar creamed with a tablespoonful of butter. Add two-thirds cupful of milk, two full cupfuls of flour, a little salt, and a teaspoonful of lemon extract. Last, beat in two teaspoonfuls of baking powder, drop by teaspoonfuls on a buttered tin, and bake in a steady oven.

Macaroon Rosettes—One-half envelope of granulated gelatin, one-fourth cupful of cold water, three eggs, one-eighth teaspoonful of salt, two cupfuls of milk, one-third cupful of sugar, two-thirds cupful of pounded macaroons, one teaspoonful of vanilla. Soak gelatin in the cold water five minutes. Make a custard of the yolks of eggs, milk, sugar, and salt. Add gelatin to the hot custard and set in a cool place. As it thickens add the beaten whites of the eggs, macaroons, and vanilla. Serve on rosettes or in patty shells, and garnish with red jelly through a ricer.

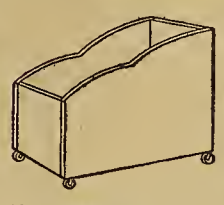
H. E. L., New York.

Codfish Balls — One pint raw sliced potatoes, one-half cupful of salt fish, one egg, one tablespoonful of cream or milk, three tablespoonfuls of butter, salt and pepper to taste. Pick the bones from the fish and let it soak two hours in cold water, changing twice. Then cut the fish and slice the potatoes together, letting them boil slowly in water until the potatoes are tender. Mash together or run through the food chopper. Then add seasoning, butter, and milk, and a well-beaten egg, mixing thoroughly. Have plenty of hot fat in the frying pan, and drop the mixture a tablespoonful at a time. Do not use hands or flour to form the cakes as is sometimes done. They will be very light and delicate.

M. H. N., Massachusetts.

Use Chicken Fat—A good substitute for butter in cakes, cookies, etc., is chicken fat tried out. It lacks the strong animal taste found in other fats.

A. B. R., Illinois.



Wood Box on Casters—It can be wheeled to the door and filled, which will save time and the tracking in of mud. Make quite a large box, higher at the back to protect the wall, put four bed casters under it, and paint it the color of the kitchen woodwork. MRS. W. E. K., Washington.

New Puzzles

Beheadings

Behead a cereal white
And leave a substance bright.

Behead a fruit delicious
And leave a plant nutritious.

Behead a hound, I say,
And leave a bird of prey.

Behead to rob or pluck;
Leave a small river duck.

Behead a fruit, just grand,
And leave a tract of land.

Behead a flower, you see;
Leave the home of a bee.

A fish of the sea behead
And leave a cry you may dread.

Behead a vegetable green
And leave what on a shield is seen.

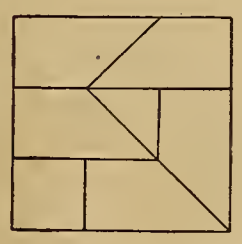
Charade

My first is a coin so bright,
Children put it in their bank.
My second is a class
Of people, high in rank.
My whole, if by any chance
You are lucky to know,
Is a sweet herb that in
Mother's garden will grow.

Answers to Puzzles

Puzzles Printed Last Issue

A Land Puzzle



This diagram shows how the farm was divided.

A Puzzle in Figures

This is the way to arrange the figures so that each column will add 55:

14	3	21	2	15
4	10		16	9
17		11		5
13	6		12	18
7	20	1	19	8

Enigmatical Rivers

1. Orange. 2. Seine. 3. Darling. 4. Lena. 5. Murray. 6. Snake. 7. Magdalene. 8. Amazon. 9. Red. 10. Po (Poe).

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Keyport, N. J.

Verna K. Spear
Youngsville, Pa.

James H. MacNeil
Coleraine, Minn.

Carmen E. Scanlon
Manawa, Wis.

Boyd F. Allen
Tannersville, N. Y.

Hazel M. Milligan
Peru, Ind.

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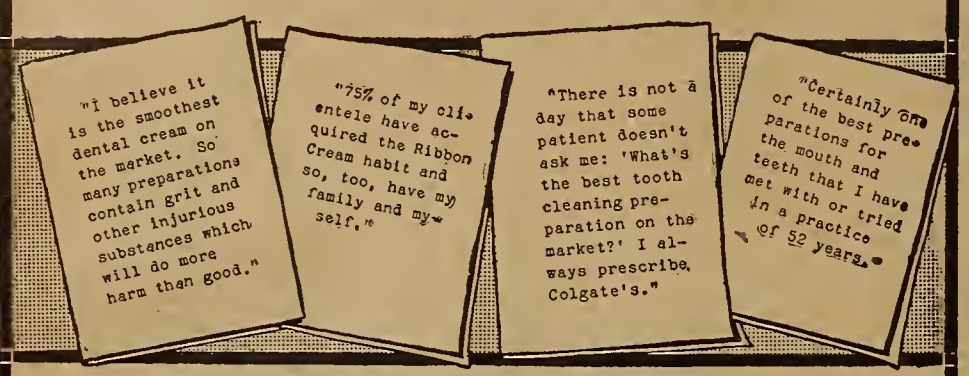

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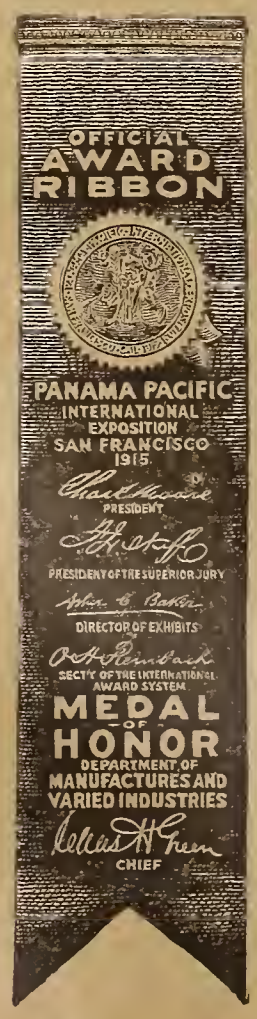

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Entertaining Ten Boys

Sunday-School Members Have Good Time

By MYRTLE S. OWEN

IT SEEMED rather a big undertaking to entertain ten members of Boy's Sunday-school class, but I had promised and I must make good.

Several days in advance I baked a large fruit cake and set it away to ripen. Here is the recipe:

One cupful of thick, sour cream, one-third cupful of seeded raisins, one and one-half cupfuls of sugar, three eggs, one teaspoonful each of soda and cinnamon, one-half teaspoonful each of cloves and allspice, flour to make a stiff batter. After the ingredients were well mixed, the raisins were floured and added last. The loaf was covered with a plain white icing.

Another cake was prepared later. This was a yellow nut cake. For it I took one-half cupful of sugar, one cupful of sweet milk, four eggs (omitting whites of two for frosting), two and one-half cupfuls of flour, in which were sifted two teaspoonfuls of baking powder. I creamed the butter and sugar, added the well-beaten eggs, and mixed the dough, alternating flour and milk. Lastly I stirred in two-thirds cupful of finely chopped walnut meats. This made four layers, and was put together with a chocolate filling and decorated with halved walnuts.

When the momentous day arrived, this is what the guests beheld: A large platter heaped with chicken, fried crisp and brown; a mound of potatoes, fluffy and white; bowls of brown gravy, delicious and rich (something a boy never gets too much of); a plate of baked sweet potatoes; sliced red-ripe tomatoes; creamy cold slaw; cucumber pickles home-made bread and butter; and a generous quantity of strawberry jam.

The way those viands disappeared was a wonder. When the dessert was brought in, consisting of cake and fruit salad, a genial look of satisfaction overspread the boys' faces.

After an afternoon spent in strenuous outdoor exercise, ice cream and cake were served at five-thirty. Six quarts allowed of two generons helpings all around, and some to spare.

Boy said, "They'll come again, Mama, if they get a chance." And I shouldn't wonder a bit if they would.

The Baited Trap—By Edwin Baird

[CONTINUED FROM PAGE 34]

"You bet!" agreed Sherwood. "Everything's fine now. Have another piece of chicken and some more corn and potatoes."

Bob smiled again as he passed his plate. It was hard for him to stop smiling. His mind teemed joyously with dazzling plans, in all of which Dolores played a stellar rôle, and when her brother, returning his plate, heaping full, said waggishly, "Dolly's ideal man now, Yates, is a farmer," Bob's delight soared higher still. For henceforth he was going to be a farmer, nothing less.

Dinner over, his host led him to an upstairs room that was equipped with a complement of office furniture, including a filing cabinet, typewriter desk, and sectional bookcases, and there, after they had helped themselves from a box of cigars, Sherwood talked agriculture for upward of an hour. He talked enthusiastically about such things as fungicides, humus, legumes, nitrates; and he touched, in passing, upon a myriad other matters, mostly of a scientific nature, the exact meaning of which Bob never would have gathered even had he been listening attentively.

And he was not listening at all, although he seemed to be. He was thinking only of the speaker's lovely sister.

Presently, though, a few words detached themselves from that diffuse torrent and smote his ear with a sting that brought him suddenly alert. Sherwood was saying:

"So you see I'm up against it financially. I'm mortgaged to the hilt, and where I'm to get money to go on with I'm darned if I know."

Bod nodded sympathetically, striving to pick up the thread of the prior discourse and connect it with this last statement. Sherwood continued:

"I did about as well as I expected this year, but I didn't break even, and I'm away behind the game. This soil is a tough proposition. Not hopeless, though. A friend of mine, a professor at Madison, examined it, and we had quite a long talk about it. It can be made prodnctive again, as I explained a while ago. But it'll take money."

"How much?" asked Bob, leaning forward from the edge of his chair.

"Well, I haven't figured it out exactly. Offhand, I should say a thousand or so. But I need three or four times that much."

Bob sat back in his chair and for several long moments gazed thoughtfully at the floor, without seeing it. The temptation was strong—overwhelmingly strong. How easy it would be to lend Sherwood the money, or buy an interest in the farm with it! What an advantage it would give him in the siege he was planning against the heart of Dolores!

And then, shamed to the quick that he could even contemplate such a dishonorable thing, he got quickly to his feet, whipped a leather wallet from his hip pocket, where it had begun to burn like fire, and extracted a slip of white paper, which he laid on the arm of Sherwood's chair.

"There's your money, Mr. Sherwood," he said.

Sherwood was staring hard at the paper, holding it outstretched between his fingers. It was a certified check, drawn to his order, for four thousand dollars. He looked up at his guest, his face a study in blank bewilderment. He was unable to speak. He could only wait for the other to explain.

Bob resumed his chair and explained the circumstances as briefly as he could. When he had finished speaking, Sherwood, who had interrupted only once, to express commiseration for Bob's bereavement, sat quite silent for the better part of a minute, his chin cupped in his palm, elbow resting on his knee, gazing at the wealth he held between the fingers of his other hand. Then he got up and closed the door opening into the hall. Without meeting Bob's eye, he said in a quiet, almost apologetic voice:

"Of course, I soon discovered how your father had swindled me, and I took it pretty hard at first. I can look at it more calmly now, however. I can see it was my fault as much as his. I went into the deal with my eyes wide open. He set a baited trap for me, and I bit at the bait. And that's why," concluded Sherwood, smoothing out the check and looking at it diffidently, "I almost hate to take this. I don't quite feel that I'm entitled to it. Here—you'd better take it back!" With sudden impulsiveness he almost thrust the check roughly upon Bob.

But Bob, who had risen, backed hurriedly away in vigorous dissent.

"You've got to keep it, man! Can't you see? It was his dying wish."

"I do *want* to keep it," confessed Sherwood, rubbing an unsteady hand across his brow. "I need it terribly."

"And you're goin' to keep it, too!" asserted Bob. "And that's not all," lowering his voice. "I'm goin' to add five thousand to it, or even more, if you'll let me. As I told you and Dolo—you and your sister at the dinner table, I want to get back on the farm again. I ain't happy anywhere else. I quit my job in Sonth Water Street yesterday. Mother feels the same as I do about it. She wants to sell the home in Peoria and move back to the country. Now, I've been thinkin' some, Mr. Sherwood. I was born and raised on this here place, and I know it like a cat knows its lifelong home. What's the matter with you and I joinin' forces—"

But he got no further. Sherwood, eyes shining, was wringing his hand in a grip of steel.

"Bob,—you'll let me call you Bob, won't you?—you're a true-blue thoroughbred! We'll make a blazing success. With your practical experience and my scientific knowledge—you've got to use science in running a farm nowadays, Bob—"

A smart rat-a-tat-tat on the door interrupted him, and Dolores' voice called to them gaily:

"What are you two plotting in there? Mayn't I come in?"

"You sure may, Dolly!" shouted her brother, and flung the door open. "Bob and I are plotting to dig several pots of gold from the ground around here."

She stood, now, in the open doorway, looking merrily from one to the other, eager to enter into their sprightly mood. And Bob, gazing upon her loveliness, added boldly on the moment's impulse:

"And I am plotting to steal your heart!"

Which was, as he afterward confided to his wife, the most important speech he had ever made. [THE END]

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possesses wonderful and exclusive devices that actually reproduce the hand playing of great artists. The musical perfection of the Emerson Player is an artistic triumph.

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We give you one LINK absolutely Free to each bracelet. Friends give or exchange others. Links only 12c. each with 3 initials engraved FREE. Send to-day for one or more, stating whether Rolled Gold, Sterling Silver, beaded or plain design. With your first order for one or more Links we send FREE a beautiful black ribbon so you can start wearing your Links at once.
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White's Weather Prophet forecasts the weather to 24 hours in advance. Not a toy but a scientifically constructed instrument working antomatically. Handsome, reliable and everlasting.

An Ideal Present

Made doubly interesting by the little figures of the Peasant and his good wife, who come in and out to tell you what the weather will be.
Size 6 ½ x 7½; fully guaranteed. Postpaid to any address in U. S. or Canada on receipt of **$1**

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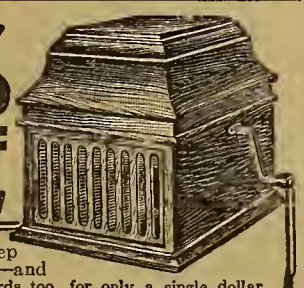

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Brand new proposition. The Wendell Compressed Air Washing Machine. Excels work of high-priced machines. Weighs hnt 2 lbs. Customers Excited. Profit 200 per cent.

AMAZING INVENTION
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Cleans tub of clothes in 3 minutes. **Squirts hot water and suds back and forth** through the clothes driving the dirt right out. A child can nse it. Mr. F. Hughes, of San Francisco, made $21 first 8 hours.
T. F. Speakman, our agent at Gainesville, Ala., pnt 36 machines out on trial. All were kept and paid for. **Profit $30 in 2 days.**
L. M. Palmer, Glen Allen, Ala., pnt 108 machines ont on trial. Sold 107. **Profit nearly $100 in 5 days.** Act quick. Territory going fast. Business supplies the capital. Write today. We want 200 more Agents, General Agents, Managers. **WENDELL VACUUM WASHER CO., 1022 Oak Street, Leipsic, Ohio**

For Stay-at-Home Days

Patterns the Busy Mother Can Make for Herself and the Children

No. 2948

No. 2948—Plaited Waist with High Collar. 34 to 42 bust. The shoulder strap which forms the yoke may he omitted. The plaits are unstitched. Pattern, ten cents

Our pattern standard—satisfaction from the first cutting through the lifetime of the garment.

THE shirt waist and dress shown on this page are the sort which the schoolgirl can make for herself, yet which are equally appropriate for her mother. The dress is good in either serge or wash fabrics, dark colors or light. Its extreme simplicity commends it to the busy woman.

These patterns are all ten cents. To order, enclose the correct amount, with your name and address, in a letter stating the numbers. Mail to: Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

No, 2851
No. 2862

No. 2851—Long-Sleeve Waist, Center-Front Closing. 34 to 42 bust. Requires for 36-inch bust, five and three-fourths yards twenty-seven-inch, three-fourths yard contrasting material. Pattern, ten cents

No. 2851
No. 2862

No. 2862—Five-Piece Skirt with or without Pockets. 24 to 36 waist. 26-inch waist requires three and seven-eighths yards of thirty-six-inch material, or two and seven-eighths yards of fifty-four-inch. Width, two and three-fourths yards. The price of this pattern is ten cents

No. 2936 No. 2933

No. 2936 No. 2590 No. 2933

No. 2936—Boy's Suit with Dickey. 4, 6, and 8 year sizes. Material for 6 years, three yards twenty-seven-inch, with three-eighths for collar and cuffs, and three-eighths for shield. Pattern, ten cents

No. 2933—Boy's Romper in Envelope Style. 1, 2, and 4 year sizes. Material required for 4-year size, two and three-fourths yards of twenty-seven-inch materiel. Pattern, ten cents

No. 2685—Girl's Dress with Large Armhole Waistcoat. 6 to 12 years. Material for 8 years, one and one-fourth yards thirty-six-inch for blouse; two and one-eighth yards for skirt; five-eighths yard for waistcoat; one-fourth yard for girdle. The price of this pattern is ten cents

Waistcoat which may be worn with dress No. 2685

No. 2685 No. 2590

Two dresses which gracefully tide over the "awkward age" in little girls.

No. 2590—Long-Waisted Dress: Double-Flounce Skirt. 4 to 12 years. Material for 8 years, one and three-fourths yards of twenty-seven-inch, with one and one-fourth yards forty-two-inch material for underskirt and sleeves, and seven-eighths yard for lining. Price of pattern is ten cents

No. 2685

This Fashion Catalogue is **FREE**

It shows you ALL the new Spring Styles

Don't Wait—Write for it To-day

Ask for FREE Catalogue No. 72 FF

Our Catalogue is a guide to Stylish Dressers. It contains 278 pages of beautiful illustrations, and we'll send it free, if you write us and ask for Catalogue No. 72FF.

Here's a Lovely Frock

35 FF 42. Exquisite Frock for dress wear, made of fine all-silk Chiffon Taffeta. An entirely new and pleasing design having full, draped blouse with a pretty chemisette of fine Brussels Net. Waist is lined with Japonica Silk. The vest of Taffeta is finished with tiny Oriental buttons. A special feature of this modish dress is the full kimono sleeves with deep, flaring Louis XV. cuffs of Taffeta. The undersleeve is of fine Shadow Lace over net, and the lace cuffs are piped with Taffeta. The wide girdle is of self-material and is tied at front. The skirt shows the season's tendency toward graceful fulness, and has a houffant Watteau drapery at each side. It is made very full and falls in rippling folds. Dress fastens invisibly in front. Comes in Delft blue, navy blue, sand or the fashionable rose color. Sizes 32 to 46 bust, skirt length 40 inches, with basted hem; also for misses and small women, 32 to 38 bust; skirt length 38 inches, with basted hem.

35 FF 42 Dress **$12.98**

Mail or Express charges paid by us.

$12.98

1 FF 40—1 FF 41 **$14.98**

Read About THIS Suit

1 FF 40. Smart Spring Suit, made of a fine black-and-white-checked worsted. Checked materials are in high favor for the coming season, particularly the larger checks like this one. The coat is a graceful, semi-fitted model, cut with rippling flare fulness at the lower part, and held at the waist by a belt of self-material which ties at the front. At the sides and on sleeves, coat is trimmed with fancy metal buttons. The sleeves have slashed flare Louis XV. cuffs, and the collar is faced with beautiful Roman striped satin, giving a smart touch of color. Coat is richly lined with finest silk Peau de Cygne in a fashionable shade of rose, and is 26 inches long. Skirt is a flare model, with Watteau effect pockets at each side, trimmed with buttons. It has two plaits down center of back. Sizes 32 to 46 bust, 23 to 30 waist, 37 to 44 skirt length. Also to fit misses and small women, 32 to 38 bust, 23 to 28 waist, and 37 to 40 skirt length. Mail or express charges prepaid **$14.98**

1 FF 41. Same style suit as 1 FF 40. Of high-grade plain, all-wool Poplin in navy blue, black, Delft blue or biscuit (the new shade of tan). Same sizes as above. Mail or express charges prepaid, **$14.98.**

We pay all mail or express charges and guarantee to please you or refund your money.

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A wonderful book—the only one of its kind—which tells you in simple words just how to paint or varnish everything around the farm. Indexed and illustrated in color.

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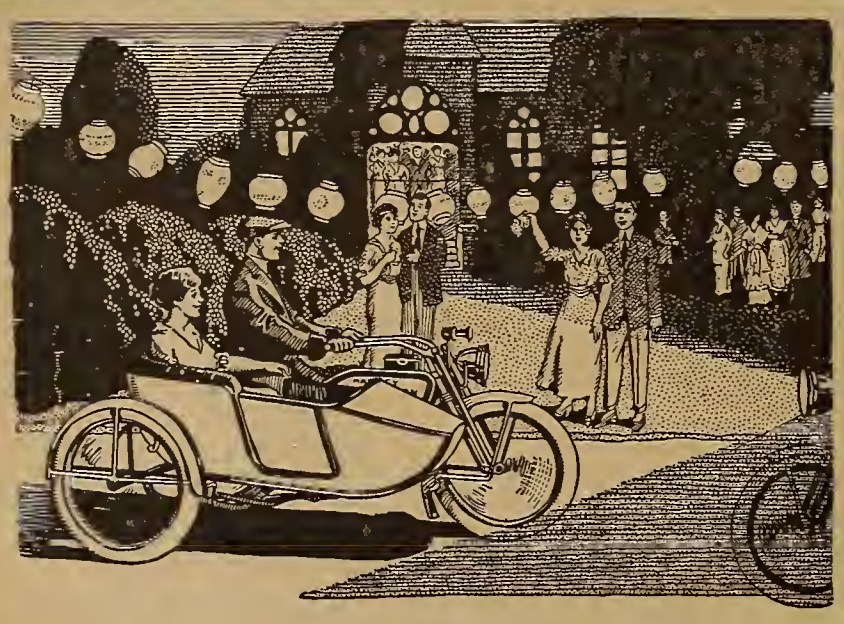

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WHEN there's an entertainment at the church—or a good show in town, or a dance, or a party at the home of a distant neighbor—then you will be glad you own a Harley-Davidson. You'll find a dozen good uses for it during the day, of course, but when the day's task is done and you are too tired to enjoy walking or driving, then you really enjoy your

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With a sidecar (detachable in a few minutes) the Harley-Davidson becomes a family vehicle, a never-ending source of recreation—wonderfully soothing to tired nerves and muscles.

Considering all that the Harley-Davidson Motorcycle and sidecar will mean to you, it is really easier for you to own one than to do without. Most dealers will arrange terms to suit your convenience

If you do not know your Harley-Davidson dealer, write for catalog.

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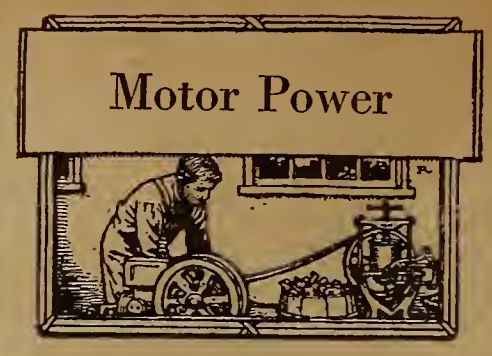

High-Test Gasoline

By W. V. Relma

A SUBSCRIBER wishes to know what is meant by high-test gasoline, and how to distinguish it from ordinary gasoline.

During cold weather many automobiles and gasoline engines are hard to start. This may be even after the engine is primed. However, a high-test gasoline can be used for priming. This gasoline will evaporate and explode much more quickly than the ordinary grade, and is consequently much better for cold-weather starting.

Gasoline can be tested with a hydrometer, which will cost about 25 cents at a supply house. Ordinary gasoline tests about 58 or 60. High-test gasoline about 70. There is also a still higher-test gasoline which registers 76 or more. Of course, these evaporate very readily and must be carefully handled.

"Oversize" Tires Explained

A READER in Wisconsin asks what is meant by "oversize" automobile tires.

This is simply a tire made larger than the standard tire for the same rim. The oversize tire has greater air capacity, and is more serviceable under heavy loads. The Society of Automobile Engineers recognizes nine sizes of automobile tires and their oversizes. They are:

Standard	*Oversize*
30x3	31x3½
30x3½	31x4
32x3½	33x4
32x4	33x4½
34x4	35x4½
34x4½	35x5
36x4½	37x5
36x5	37x5½
38x5½	39x6

Notice that the oversize is always an inch greater in diameter and half an inch wider

AN AUTOMOBILE has traveled from Indianapolis to Terre Haute, Indiana, a distance of 72 miles, in seventy-seven minutes. The time of the fastest train between the two points is ninety-one minutes.

Opinions on Tractors

WE WROTE to a number for their opinions on the practicability of motor trucks and tractors. It was not a selected list: the names were taken simply from the mailing list.

Tractors were more popular than motor trucks by about ten to one, and nearly everyone who was interested in both said he would get the tractor first. An Iowa farmer wrote:

"I would want a tractor of about 12-horsepower for plowing and working my ground down so I could have a good, fine seed bed. I would not want to pay over $350 or $400 for it. A tractor would be of good service to me."

Here is the opinion of a Michigan subscriber:

"I have no stumps and very few stones on my farm, and it is all level ground. The kind of a tractor I need should have the power of four good horses. I would want it to do all kinds of heavy farm work, and be geared so it could travel ten miles on the road and pull a wagon. I should expect it to cost about $400."

The following letter is from a tractor user in Ohio:

"I have used two tractors, the first a heavy machine that gave 20 horsepower on the draw bar, but I did not like it. It packed the ground too much in the spring. The one we are using now has six horsepower on the draw bar and twelve for belt work. It pulls two 14-inch plows six to seven inches deep in clay ground. We have 240 acres called quite tough, but it goes right along. We tried to get a larger size, but the factory was so far behind with its orders we could not wait, so got the smaller size. We use it for plowing, disking, rolling, dragging, husking, and grinding corn and oats. In the field it does about as much work as two three-horse teams. The drive wheel runs in the furrow, and we can plow with it any time we could plow with a team. It cost $425 delivered. We expect to buy a larger one so we can plow ten inches deep, as the one we have won't do that in our ground. But we will still keep our present one. It takes about 15 gallons of gasoline to run 10 hours, but a good man can mix one third of cheap oil at eight cents a gallon with it and reduce the cost of running quite a bit."

A conservative Iowa man says:

"I don't know very much about trucks and tractors. Would rather work with an old horse team than with anything else. They are the safest."

This one is from a man in the Badger State, who says:

"A tractor would be of more service to me than a truck, though both would be useful. I need a tractor for plowing, disking, and dragging. That is the hardest work for my team. I would not want a tractor smaller than eight horsepower; ten horsepower I think would be all right, and a price about $650."

Auto Drivers Being Curbed

MAINE state authorities have revoked sixty automobile drivers' licenses for fast driving and irresponsibility since a safeguard law went into effect about six months ago. A marked effect in favor of safe and sane driving is now evident.

The Massachusetts courts and highway commissioners are uniting to prevent drinking motorists from obtaining drivers' licenses. In the wreckage of a touring car near Boston, recently, were found a quantity of telltale broken beer and whisky bottles.

THE tractor has arrived.. First study your farm and see if a tractor will pay. Then study tractors to see if there is one on the market at a price you can afford and which will fit your farm. If both these questions are answered in the affirmative the tractor should be bought.

Eulogy to a Tractor

THE supper bell proclaims the end of day;
Of what he's done the tractioneer is proud.
So homeward bound the plowmen steer their way,
And leave a forty-acre field all plowed.

Now fades the smell of oil from off the hills,
The furrows brown a quiet stillness hold.
To-morrow come the harrows and the drills,
And soon there'll be another crop of gold.

Eighty Maxwells Make Good

ONE day last Autumn, eighty stock Maxwell automobiles left Buffalo, N.Y., for as many points along the Atlantic Coast, from Portland, Me., to Baltimore, Md.

Every item of expense of these eighty Maxwells—for gasoline, oil, tires, and repairs—was carefully checked and recorded.

Under Sworn Records

And the sworn affidavits of these eighty Maxwell drivers created a new record for automobile economy by showing a gasoline consumption as low as 36.85 miles per gallon—an oil consumption as low as 1134 miles per gallon—and *no expense* for tires or repairs.

Maxwell—"The Car Complete"

The "first cost" of a Maxwell is your *only* cost. Nothing you can buy *extra* will make it a better automobile. It is *absolutely complete.*

The "after cost" is, without exception, the lowest of any automobile of equal weight. The bona-fide affidavits of these eighty drivers prove it. 70,000 satisfied Maxwell owners back up this proof.

Every Road a Maxwell Road

The Maxwell has abundance of power and speed. It conquers hills and pulls through the worst of roads in any weather. It has strength and durability to withstand the hardest usage. Yet it is the most economical automobile in the world, to buy and to run.

Write for Illustrated Catalogue

MAXWELL MOTOR COMPANY, INC.

Dept. A. G. DETROIT, U.S.A.

This gives you the right idea of Maxwell completeness at $655

ELECTRIC Starter and Electric Lights.

MOTOR—Four-cylinder, L-head type, cast en bloc. Bore 3⅝ in.; stroke 4½ in.

MAGNETO—Simms high tension.

CLUTCH—Cone, faced with multibestos lining, runs in oil.

TRANSMISSION—Selective sliding gear. Three speeds forward and one reverse.

CONTROL—Center left side drive; foot accelerator. 16 in. steering wheel.

WHEEL BASE—103 inches; tread 56 in.; 60 in. optional for the South.

WHEELS—Artillery, of best grade hickory; with demountable rims.

TIRES—30x3½ in., front and rear. Famous make of anti-skid tires in rear.

SPRINGS—Front, semi-elliptic. 32 in. long. Rear ¾-elliptic, lower half 40 in. long.

AXLES—Front, drop-forged, I-beam section, complete with spring seats. Rear, floating type.

BRAKES—Internal and external, actuated on 12½ in. drums on rear wheels.

EQUIPMENT—Two electric head lights with dimmer, electric tail light, generator, storage battery, electric horn, speedometer, "one-man" mohair top with envelope and quick adjustable storm curtains, double ventilating rain-vision windshield, improved instrument board with all instruments set flush, spare tire carrier with extra demountable rim, jack and tools.

All Maxwell Dealers Can Show You Copies of Original Affidavits as Reproduced in this Advertisement

Maxwell
$655
F. O. B. Detroit

All for only 10c

We make this offer because we want you to know Henderson's Seeds and Henderson's Service, and to obtain a complete distribution of our new catalog among those interested.

Henderson's Remarkable Offer for 1916

TO demonstrate the superiority of Henderson's Tested Seeds, and to quickly obtain a large distribution for our mammoth annual catalog, "Everything for the Garden," we have made up a collection of six of our best specialties which we will send for 10c, along with our catalog and our "Garden Plans." This is beyond question one of the most liberal introductory offers we or anyone else has ever made.

Here is the Offer

1. **"Everything for the Garden"**—our 206-page 1916 catalog. It is handsomely bound with a beautifully lithographed and embossed cover. Contains 16 colored plates and over 1000 illustrations. It is a library of everything worth while for farmer and gardener.

2. **Henderson's Garden Plans.** These are a series of suggested layouts for your garden, and will be found to be unusually interesting and helpful.

3. **Henderson's White Tipped Scarlet Radish,** of quick growth, small top, flesh white, mild and crisp.

4. **Henderson's Big Boston Lettuce.** A grand large head lettuce. Compact, tender, crisp.

5. **Henderson's Genuine Ponderosa Tomato.** The grandest tomato on earth. Magnificent size, solid and meaty, with but few seeds.

6. **Henderson's Invincible Asters.** Mixed Colors. The highest development in Asters. Immense double flowers, on large stems.

7. **Spencer and Eckford's Large Flowering Sweet Peas.** Mixed Colors. A glorified new race, surpassingly superior to the older sorts.

8. **Henderson's Butterfly Pansies.** Mixed Colors. Largest flowers and a magnificent variety of colorings.

9. **Coupon envelope, accepted by us** as 25c toward any order of not less than $1.00 for our seeds, plants and bulbs.

Every empty envelope counts as cash

When you receive Henderson's Collection of Specialties keep the coupon envelope in which the collection is enclosed. This coupon envelope will be accepted as 25c cash payment on any order of one dollar or over.

Send us 10c with the coupon below and you will receive our catalog, our Garden Plans, 6 packets of Henderson's Tested Seeds and the coupon envelope, worth 25c.

Quality of Seeds

—means bigger production and increased quality of results

The unknown quantity in your garden and on your grounds is the quality of the seeds you plant, and you cannot be too careful in seeing that you obtain the best procurable. Every packet of Henderson's Seeds has behind it the knowledge and experience of 69 years of successful seed growing and selling. Most of the best methods of seed trials and testing originated with the founder of our house, and these have been improved from year to year through three generations of seedsmen and are today still the best. Possibly as critical planters as any, in the choice of their seeds, are the market gardeners or truck farmers. As an endorsement of the quality of Henderson's Seeds, we take pride in the fact, that Peter Henderson & Co. supply a larger number of professional growers than any two seed houses in the world. Henderson's Seeds are Tested Seeds.

Everything for the Garden

We want to send you our beautiful new 1916 catalog—206 pages, 16 color plates, over 1000 illustrations—the most complete gardening catalog ever printed. We also want you to have our valuable "Garden Plans," of which one of our customers says, "I found them of immense value in laying out my garden," containing suggested layouts for your garden made up by men who are thoroughly capable. We also want you to know and try Henderson's Seeds. So we have made up a package to include six packets of seeds, our new catalog, and the 1916 edition of "Garden Plans," all of which we will send you for 10c. Read complete details of offer at top of page—then send 10c with or without coupon. It is a condition of this special offer that you mention this publication.

Peter Henderson & Co.
35 and 37 Cortlandt Street
New York

Now!

Send in the coupon or a letter, enclosing 10c, coin or stamps. You will be pleased with what we send you, we are sure. It is the best introductory offer we have ever made.

1916 Offer Coupon

Peter Henderson & Co.
35 and 37 Cortlandt Street
New York

I enclose 10c for which send me your catalog, "Everything for the Garden," your 1916 "Garden Plans," and the 6 packets of seeds enclosed in coupon envelope good for 25c as explained in your advertisement published in *Farm and Fireside.*

Name.....

Address.....

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c W

39/11

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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

5 cents a copy

Saturday, February 26, 1916

PHOTOGRAPH BY CLARENCE A PURCHASE

Bringing Orders for Butter and Eggs

HARTMAN'S SPECIAL Farm Credit Plan

HARTMAN'S Sensational Bargains

Look at the bargains on this page. Every one is a big money saver. You couldn't begin to buy elsewhere, paint and roofing, or a gasoline engine, an incubator, brooder or cream separator of the Hartman high quality at anywhere near the low prices we ask, even were you to pay all cash. On the Hartman Plan you see and test the quality of your purchase before you decide to buy and, if goods are satisfactory, you have practically your own time to pay.

Order Direct From This Page Send no money—not a cent in advance. Hartman will ship the goods promptly—no deposit required—no C. O. D.—no tiresome "red tape"—no security—no interest to pay. We give you free, wide-open credit in the literal meaning of the word. Everything is strictly confidential. You run absolutely no risk.

375 500 750 and 1,000 Pounds Capacity

No Money Down

Your Credit Is Good

CREAM SEPARATOR

Lowest price ever made on a strictly high grade Separator. Learn from your own experience that here, at last, in the Majestic is a perfect separator—a masterpiece of mechanical skill and ingenuity. Test it on warm or cold milk and find out by actual results how the Majestic skims down to the last drop—note the condition of cream—note how quickly it skims.

The Majestic Cream Separator has all the latest improvements including remarkable inside oiling device that keeps gearing perfectly lubricated and absolutely prevents a drop of oil coming in contact with cream. Improved separable disc bowl. Simplest to clean—all parts readily accessible—no nooks or corners to gather dirt.

Order Direct From This Advertisement. Just state size you want. We will ship it promptly. If not satisfactory after 30 days trial, return at our freight expense both ways. If you decide to keep it, make first small payment in three months; balance in 3, 6 and 9 months thereafter. No interest to pay.

FREE SEPARATOR BOOK. Fully describes the remarkable Majestic and proves its great value. Mail Coupon today.

MK188.	375 lb. capacity.....$36.95	MK190.	750 lb. capacity....$49.75
MK189.	500 lb. capacity.....42.50	MK191.	1,000 lb. capacity....57.50

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No. MK193. 80 eggs **10.45**
No. MK194. 150 eggs **14.75**
No. MK195. 250 eggs **18.95**

Metal Covered Incubators

No. MK210. 120 eggs **$11.75**
No. MK211. 175 eggs **13.85**
No. MK212. 240 eggs **15.95**

INCUBATORS

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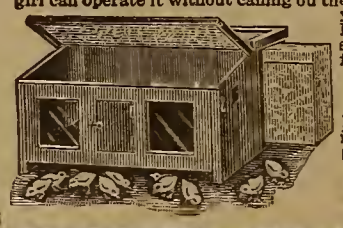

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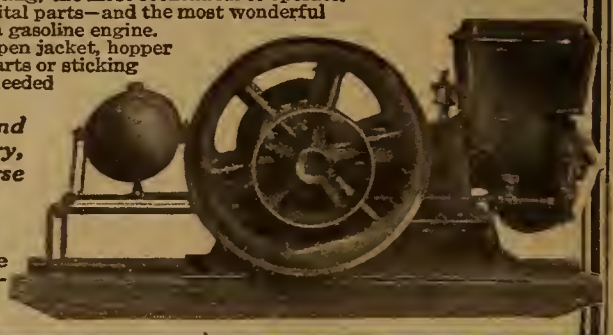

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Vol. XXXIX. No. 11 SATURDAY, FEBRUARY 26, 1916 *Published Bi-Weekly*

Three Acres in Apples

What an Oregon Man Does to Get 1,400 Bushels of Fruit

By O. H. BARNHILL

THIS is a story of the only apple orchard in the famous Rogue River Valley of southern Oregon which, so far as can be learned, produced a full crop last year—more than 1,400 bushels of merchantable fruit from less than three acres. For ten years, or ever since it has been properly cared for, this orchard has produced paying crops. The owner is often asked what constitutes the secret of his orcharding success. There is no secret, unless it be the exercising of good, common sense and practicing what is preached by the highest horticultural authorities.

The location of Wimer Cove Orchard is ideal—a steep north hillside at the head of a cove or draw. This protects the trees from strong winds, and renders the use of orchard heaters unnecessary. The soil is mostly red clay and black loam. The varieties are the two most profitable for this region—Newtown and Spitzenburg, 54 of the latter and 96 of the former, also two Winesap, one Baldwin, and one Willow Twig.

The trees were set 28 feet apart each way. For several years the branches of some of the larger trees have had to be cut back to keep them from interlocking. The largest tree is 25 feet high, 13 inches through the trunk, and has a spread of branches of 30 feet. Trees with tops 20 feet across and 16 feet high have yielded 16 boxes of apples, while some of the larger ones have borne 20 to 25 boxes. Trees of the smaller size given, or a little larger, are the most profitable, as the added expense of pruning, spraying, thinuing, and picking more than offsets the somewhat larger yields secured.

The trees were headed low, two to three feet, and most of them have well-formed tops, although fewer main branches would be better, making the trees stockier aud better able to support heavy crops of fruit.

As above stated, it is only during the past ten years that this orchard has been properly cared for. Previous to that time it was the property of a miner who knew more about panning yellow metal out of creek beds than of producing yellow apples for the stewpan. Although he never struck pay dirt in his apple orchard, he builded better than he knew, for he grew good trees of the most profitable varieties in a first-class location. Where he fell down was on spraying, thinning, irrigating, and marketing—all very important operations.

At last, one fine day early in August, a professional orchardist came along, sized up the orchard, bought it for a song, and sang it himself. The first move which the new owner made was severely to thin the fruit, literally covering the ground underueath some of the trees with half-grown apples, many of which were wormy. The neighbors held up their hands at what they considered wanton waste, but the few apples which were left on the trees grew to good size, and were later sold for enough to pay the entire purchase price of the orchard. A few years later a single crop sold for over $1,900, and the 1915 crop will probably bring nearly $1,800, in spite of the present hard times and unsatisfactory market conditions.

The trees have been carefully pruned each year, so that no severe cutting or dehorning has been necessary. Four annual sprayings have practically rid the orchard of fungous diseases and insect pests. Black apple scab, green and rosy aphis, and San José scale are controlled by spraying with lime-sulphur and tobacco extract, diluting the former with ten times as much water and adding one pint of black-leaf-40 to 100 gallons of this solution. We have found it very important to apply this spray just as soon as the buds turn green, and before the leaves begin to unfold. As a further precaution against apple scab one gallon of lime-sulphur is added to each 30 gallons of the first codling-moth spray. The latter is applied as soon as the blossoms have fallen, and before the calyx closes. Two and one-half pounds of powdered arsenate of lead dissolved in 100 gallons of water makes the best spray for killing codling moth. Instead of spraying again in ten days, as is usually advised, we wait some six weeks, making the second application about the middle of June. The last spraying is done the second week of August, or as soon as the last brood of worms begins to work on the apples.

Inspector Visits the Orchard

POWDERY mildew and woolly aphis do a little damage, but not enough to warrant additional sprayings. Baldwin spot injures a few of the apples, and fire blight some of the trees, but no remedy has been found for these diseases. The latter has destroyed two trees and injured two more by getting into the roots and working up into the trunks before being noticed. The fruit inspector makes occasioual visits to our orchard, looking for blight, so there is little liability of its doing further damage.

Twenty-seven boxes of apples were produced by this Spitzenburg tree in 1915. The Wimer Cove three-acre apple orchard consists of 54 Spitzenburg, 96 Newtown, two Winesap, one Baldwin, and one Willow Twig trees

Four Sprayings Cost $85.75

SPRAYING is done with a power outfit operated by two men, who charge $12 for wetting the trees once. Our spray bill for labor and chemicals the past season was as follows:

2 bbls. lime-sulphur @ $7.50	$15.00
70 lb arsenate of lead @ 20c	14.00
7 lb black-leaf-40 @ $1.25	8.75
4 sprayings @ $12	48.00
Total	$85.75

The steepness of the ground and the necessity for irrigation renders cultivation impracticable. Only twice during the past ten years has the orchard been plowed. The first time the ground was seeded to vetch, and the last time to vetch and mammoth red clover. The orchard has now been seeded down for three years, and the trees have been bearing record crops of fine fruit and making an annual scion of 12 to 18 inches. Timothy, orchard, and other grasses have largely supplanted the original crops sowu, but they all add humus to the soil, and afford a protective covering, while the clover and vetch, being legumes, added fertility.

Until a few years ago the orchard was largely self-irrigated by the seepage water from a near-by miner's ditch. Since the latter was filled up, water has been obtained from the city water system, the charge being $8 per acre for the season. Three small ditches cross the orchard—one along the upper side, one near the lower side, and the other halfway between. Water is let onto the ground through little notches, two or three feet apart, cut in the lower bank of the ditch with a hoe. When the water reaches the ditch below and the ground between is thoroughly soaked, the notches are filled up aud new ones cut farther down the ditch. In this manner the entire orchard is giveu a thorough wetting several times duriug the growing season. Being in sod, there is no trouble with the ground's washing, puddling, or baking, while the mulch of grass and clover keeps it cool and moist. Pocket gophers, moles, and ground mice make more or less trouble, as the water has a tendency to collect in and flow through their runways, but traps and poison keep the rodents pretty well thinned out.

Thinning is an important operation, and one which calls for the exercise of a good deal of care and judgment. The average person seems to know nothing about the work save to leave one apple in each place. We sometimes leave two in a place, and sometimes none, depending ou how thick the apples have set, their size and the vigor of the tree, the aim being to leave just enough apples so they will all be of good, merchantable size. Siuce it is impossible to do a perfect job at one thinning, the trees are gone over again a second time when the apples are about half-grown, all defective, blemished, and undersized fruit being removed.

For propping we use 1x2-inch strips, mostly six to eight feet long, with a notch sawed in one end. A single tree sometimes requires a dozen or more props, while others need none. Where they will do so without breaking, the branches are allowed to bend nearly to the ground, as in this position they are more easily sprayed and thinned, and are less liable to wind iujury.

Five years ago we built a 20x40-foot packing house, eight feet to the eaves, using 12-inch boards with battens over the cracks. Apples keep in good condition until spring in this building.

The best picking vessel we have found is a 10-cent market basket with a wire hook attached to the haudle for hanging onto limbs. Ordinary stepladders with 12 to 18 inches cut off the lower ends of the braces are used for picking. Ladders are always set so the pickers face uphill.

Box shooks are bought early in the season, and made up into boxes, which are hauled out iuto the orchard as needed for picking, old boxes being used for culls and windfalls. The fruit is hauled to the packing house on a one-horse sled, which consists simply of two 2x4's for runners, with inch boards nailed across, holding a dozen boxes. The boxes are filled level full, and stacked six high in the packing house.

A table two feet high runs along the south side of the packing house, the lower edge being just high enough so wheu a box is placed thereon the tips of the fingers will touch the bottom [CONTINUED ON PAGE 12]

Saving the Orchard

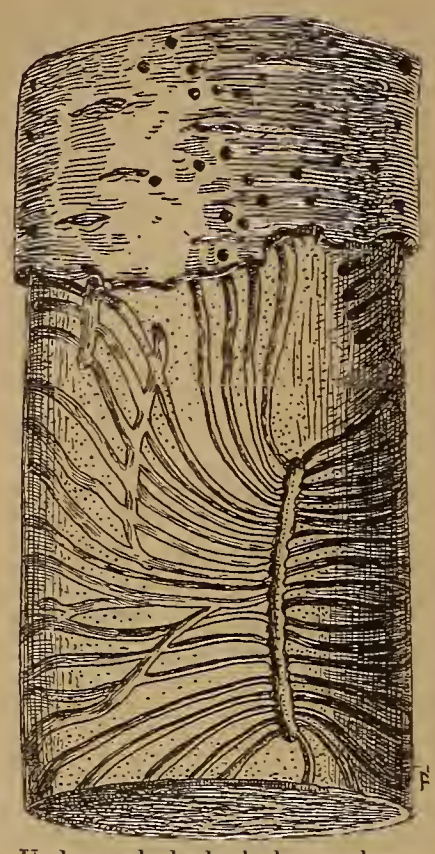
How to Prevent Bark Beetle from Injuring Fruit Trees

By JOHN COLEMAN

I OFTEN used to wonder what made the little shot holes in the trunks of fruit trees. I call them shot holes because they are just about as big as fine shot, except that they are deeper than shot could possibly go. I never thought these holes were a very serious matter until an apple tree having these holes in the trunk blew down.

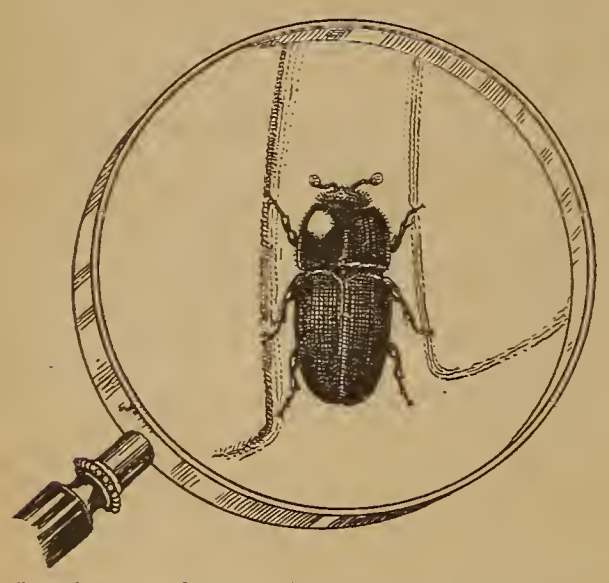
I had noticed last summer that its leaves were a little pale, but never suspected the tree to be nearly dead. Some of the bark had been accidentally peeled off, and underneath the bark I noticed that the wood was all grooved and full of burrows. In these burrows were a lot of grubs. There must have been nearly a hundred.

I then knew that something was wrong with the whole orchard, as other trees, too, had the same kind of shot holes. So I went up to the house and began looking through my library. Finally I found some bulletins dealing with insects, but the pictures of the bugs were all so magnified that they didn't look like any bug I knew of. I glanced through the books, but without success until near the end of one I saw a picture that resembled the burrows in the dead apple tree. With that as a clue I finally learned that all the trouble was due to bark beetles, sometimes called shot-hole borers. I learned that peach and cherry trees exude gum through the holes, that apple and pear trees do not.



Underneath the bark the wood was grooved and full of burrows

This bark beetle is about as big as a grain of wheat, color black, with russet wing covers. The female beetle bores into the bark for food, and as soon as the sapwood is reached she turns and burrows either up or down the trunk for about an inch. Each female lays about seventy-five eggs in her burrow, and when they hatch, the white worms bore into the sapwood in search of food, at right angles to the parent burrow. It is at this time that the galleries are made. After going through a short dormant stage, the mature beetles come out of the tree and cause further damage



This bark beetle, magnified many times in the picture, is naturally the size of a grain of wheat

by boring into branches and small twigs of the trees.

We never had this pest here in this country till about 1880, and now it is all over the United States except in the far West, and there is no assurance but what it will discover those fine California orchards any time. You sometimes hear people say that we used to have just as many pests as we have now, only we notice them more nowadays because the markets are more particular and fruit has to be about perfect in order for it to sell at all. But as I started to say, this bark beetle is only of our present generation here in America. It came over from Europe in the early eighties. There are two broods. The first one appears in June, and the second brood of beetles comes along in July and keeps on coming way into September. So I concluded that I'd have to fight not only a formidable army of them but also their reinforcements.

Thus far all was clear. But how was I to save my orchard? Fortunately, I had always been fond of birds, and there were on the place a great many woodpeckers, which I learned devoured the worms in large quantities. My chief shortcoming had been my failure to cut out the dead wood in the orchard. The beetles breed and grow chiefly in the dead and weakened wood, but they were so plentiful in my case that they attacked the good trees too. Here is my program for future action according to official directions:

Cut down all dead or nearly dead trees. Prune off all dead limbs, leaving no stubs. Put plenty of manure on the orchard to supply fertility and increase sap flow. Whitewash the trunks and bases of large branches, using a broom to do the work, and having a quarter of a pound of salt to three gallons of whitewash in order to make it stick.

A still better whitewash to use is the so-called weather-proof whitewash recommended by the Government for exterior use. Take one bushel of quicklime and slake with twelve gallons of hot water. Then dissolve two pounds of common table salt and one pound sulphate of zinc in two gallons of boiling water, and pour this mixture into the first mixture. Finally add two gallons of skimmed milk. This will give about half a barrel of whitewash, which is enough for a good-sized orchard.

If you want to make it stick extra well, add alum at the rate of one ounce to the gallon. I have heard of fruit growers using carbolic acid in whitewash intended for orchard use. This is said to repel the pests because of its odor as well as killing any borers that eat the whitewash.

Put on three applications, at six weeks' intervals, during the summer. The beetles dislike to expose themselves on a white surface and, besides, the whitewash fills the crevices in the bark and discourages the few beetles that are brave enough to try to bore.

Foiling a Worm

Apple Pest Can't Survive Spray

By ORAN PHELPS

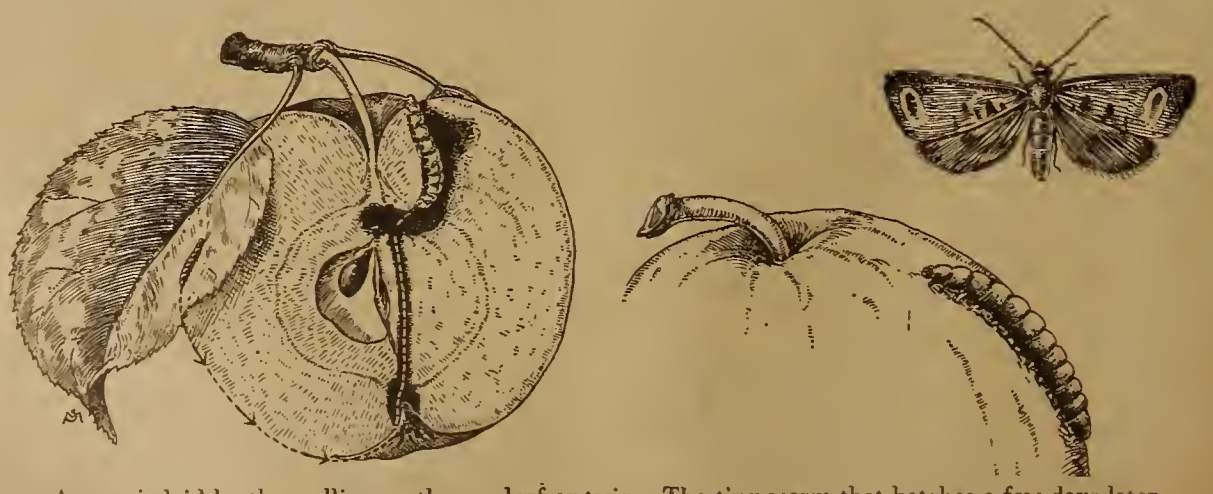
ONE of the things I used to wonder at was how the worm got inside when the outside of the apple was perfect. Several years ago I thought that apple worms were a part of the inevitable, just as drought and taxes, but that is not true. Let us follow the wormy apple backward to see just how it happened to be.

The worm came from an egg about as big as a pinhead. The egg was laid on a leaf or twig about blossoming time. In about eleven days the egg hatched, and from it came a tiny worm that crawled into the open end of the blossom of the apple, just as it was changing from a blossom into fruit. In a few days more this worm, which had grown in the meantime, ate its way down along the core, regardless of the fact that the apple was green and bitter.

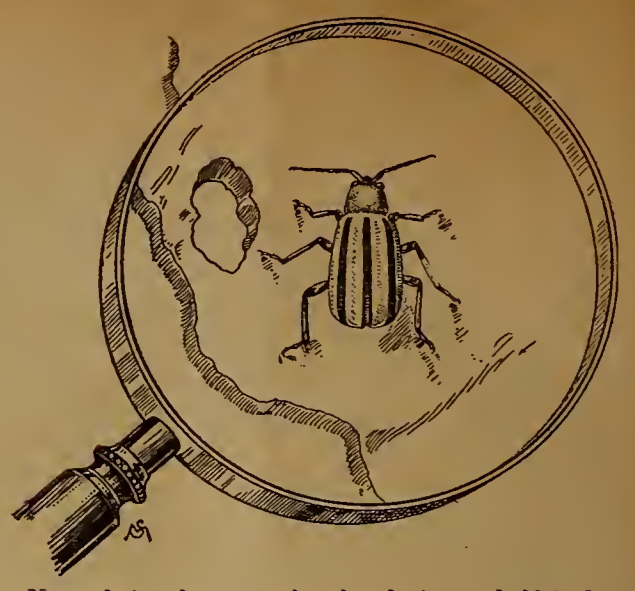
Going back again to the egg, we find that it was laid by a harmless-looking, brownish-gray moth known as the codling moth. This moth came out of a silken whitish-gray cocoon made by the full-grown worm that came out of a previous apple. The holes in the skin are made only by the worms that come out of the apple. The cocoon is usually found under a piece of rough bark or in a niche or crotch of the tree. There are two generations of the apple-worm codling-moth family. The first generation goes through the whole family process in about fifty days. The second generation of worm passes the whole winter in a cocoon.

If you do nothing about the apple-worm pest you can expect about three quarters of the apples to be wormy unless you have a great many birds in the orchard which eat the moths and worms. But the apple worm is quite an easy fellow to control.

The first thing to do is to prune the trees so that they can be easily sprayed. Then as soon as the blossoms have fallen, spray well with a good arsenic poison, of which arsenate of lead is the best. Get the poison well into the calyx of the apple so the young worms will eat the poison and die. A month later spray again to kill the worms that have survived, and a month later still, give the trees another spraying. This is usually enough.



An egg is laid by the codling moth on a leaf or twig. The tiny worm that hatches a few days later from the egg crawls to the apple blossom. Then it eats its way to the core and on out



Natural size the cucumber beetle is one-half inch long. It has yellow and black stripes on its back

Full spraying instructions come with the poison and spraying supplies, or you can obtain detailed directions from FARM AND FIRESIDE, Springfield, Ohio.

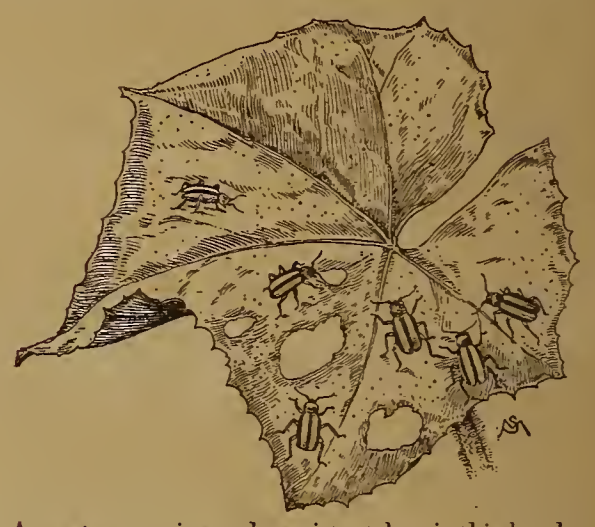
To Kill Beetles

When Bugs Eat the Garden Truck

By CARLTON F. FISHER

THE cucumber beetle has always had his own way pretty well with me. He's a most aggressive and persistent fellow, and always has a large famliy to help him. But lately I've taken the pains to size him up, and I'm sure I can whip him.

You've seen him, about half an inch long, striped



A most aggressive and persistent bug is this beetle, and it has a large family to help it

on the back with two broad yellow stripes and three black ones. He eats holes in the young leaves of melons and squash, as well as cucumbers. The cucumber-beetle family has a triple-action way of doing damage. The adult beetle eats the leaves, and while doing so spreads a bacterial wilt that kills the vines. And while this is going on above ground the larvæ (worms) from the female beetle's eggs are hatching and chewing away at the root. They seem to come from nowhere and everywhere.

I began my campaign in the fall as soon as the cucumbers were harvested. I covered all the vines except ten with straw, and set fire to them. I waited till all the bugs that had not been cremated had located on the remaining ten vines, which were really traps, and then I sprayed those vines with Paris green, and repeated the spraying till I could find no more bugs.

That made a pretty thorough clean-up. Then in the spring I planted beans in alternate rows between the cucumbers, three weeks ahead of them. The beetles congregated on the beans and, having plenty of food, left the young cucumber plants pretty well alone. But I wanted a thorough job, and this is how I did it: In the morning when the beetles were active I dusted all the cucumber plants with road dust, and as soon as the beetles congregated on the few that weren't dusted I sprayed them with Paris green. While the cucumbers were growing I kept the ground well cultivated, and used the Paris green treatment after every rain.

My troubles from the beetles are now well-nigh ended. Two years ago they were so bad I almost decided to give up raising cucumbers, but hated to be outdone by a lot of pesky beetles.

Now that the beetles have about given up I not only have a fine crop of cucumbers but have the satisfaction of being the boss of the situation. I shall repeat the burning process again this fall, and next spring there will be so few beetles that I'll feel tempted to tame them and keep them as pets.

When you have only a few cucumber plants, you can keep the beetles in check pretty well by hunting them and crushing them between paddle-like sticks. The beetles are usually in the flowers in the early morning. Especially if the night has been cool, you will find the beetles quite inactive if you make your attack on them before seven o'clock in the morning.

E.W.

Garden Cuts Grocery Bill

One Large Farm Family Grows All the Vegetables it Needs

By L. E. ARMOUR

In planning the home garden it is well to estimate carefully the amount of vegetables needed and the varieties most liked by the family. With a market garden raise the vegetables for which the market calls

OUR garden is never neglected because our family, which consists of nine persons, likes vegetables. We arrange it so as to have a variety of vegetables. We have them growing the entire year, as we live in a Gulf State, and can such vegetables as cannot be grown dnring the winter months. Without a garden the supply bill for onr family wonld be enormons, but we do not consider that the only saving. We are snre that the health of onr family is due largely to the big variety of vegetables we eat.

In planting we plan to have the early qnick-growing crops in the same plot, to be followed by collards and winter cabbage, which are planted in April and transplanted in May.

We order early cabbage plants every year. They matnre in time for ns to grow a crop of June corn and peas on the same ground, which are followed by fall-planted onions, making three crops on same ground in one year.

Of bush beans we plant but one variety—Stringless Green Pod. They are of fine flavor, very prolific, and continue to bear until after pole beans are ready for use. Of the latter we plant two varieties, White Creaseback for early and the Kentncky Wonder for late, one row of each, side by side. We place posts in the middle between the two rows, and stretch a wire from one end of the row to the other on top of posts. Against this wire we lean tall poles from bean hills of each row, and when first planting begins to fail we plant more seed on opposite sides of poles, so one "sticking" supports the year's crop of beans. We have fresh beans until frost.

For beans, cncumbers, and sqnashes we use poultry droppings as exclnsive fertilizer, and our garden does not "fire" during hot weather as do those of our neighbors who use barnyard fertilizer.

We plant two rows of cncnmbers, side by side, using seed of Fordhook Famons for one row and the Everbearing for the other. We keep vines tnrned in the middle between the rows, which makes a dense shade and holds moistnre, insuring a long season of bearing. We have hills six feet apart.

Of squashes we plant the Summer Crookneck in hills four feet apart. When first planting of cncumbers and squashes show signs of failing, new hills are planted between the first. After frost onions are planted on these rows.

One planting of eggplant in April continnes in bearing until frost. The Black Beauty is an excellent variety.

Two plantings of okra—one early in April, another early in June—will insure plenty until frost.

We plant carrots and salsify in the spring and again in September. The last planting grows throughout the winter in our climate.

For palatable, healthfnl salad, and an abnndance of it, nothing excels Swiss chard. It, too, will grow all winter, and the spring planting lasts until midsummer if the leaves are jnst pulled from the stalks, leaving the tender buds. The various ways in which it can be prepared for eating is one great advantage it has over most salad plants.

English peas and Lima beans picked green when ready for shelling, spread in a shady loft to dry, are almost as good in winter as when picked fresh from the vines. We use Henderson's bnsh Lima beans. From some cause which I do not understand the large-seeded Lima beans do not snceeed here.

Matchless and Red June are my favorite tomatoes. Planted on nearly level rows they continue to bear nntil frost.

I find Klondyke, Aroma, and Missionary a good collection of strawberries for the home garden. We mulch ours with coarse manure mixed with the straw nsed for bedding for the stock. In the spring this is worked into the soil with beneficial resnlts.

We scatter barnyard mannre over onr garden before planting time, then break the ground deeply, and pnlverize thoroughly. Having a large garden, it is easily cultivated with horses, and is cnltivated every week unless rain forbids. This reduces the hand labor and insures a longer-lived garden than when hand cnltivation alone is depended upon.

A "gee whizz" cnltivator is a good garden implement. For hand work a hoe, rake, and prong hoe are all that are needed in a garden where horses are used.

E W

Radishes, lettuce, and the like, grown on beds next to the garden fence are mnch more profitable than a crop of weeds and grass.

That Acre Patch

Plants Put Out Early May Freeze

By CHARLES E. THOMPSON

WE LOCATED our garden as near the house as possible, thereby saving many steps. We have our yard and garden under the same poultry-tight fence, so we are bothered very little with the poultry aronnd the honse or garden.

The garden is just west of the house, with a row of fruit trees forming the border line. It lies next the road, and we think that, in the snmmer especially, nothing will add more to the appearance of the farm-house than a well-kept garden. After the garden was laid ont we gave it a thorough coating of farmyard manure, about 20 or 25 tons to the acre. We manure the garden every year, bnt do not use as much as the first year. After three years' use as a garden the gronnd became too wet, so we gave it a thorough tiling with splendid resnlts.

We plow the garden as early as the weather and ground will permit. We plant as soon as warm weather comes in the spring. I have no sympathy with the idea that we mnst rnsh out and plant some garden the first warm days that come in March or April. Plants pnt in the gronnd too early are liable to be frozen or stnnted. Plants growing too early will never have the crispness that later plants will have, on acconnt of a too slow growth, and when the hot dry days come they will be so near matnre that their growth will stop.

We have tried to raise almost everything in our garden, but have concInded it doesn't pay. In the fntnre we will plant only the staple vegetables, snch as potatoes, onions, sweet potatoes, beans, parsnips, beets, radishes, lettuce, cabbage, sugar corn, popcorn, tomatoes, and pieplant. The ones with which we have had probably the best resnlts are potatoes, beans, cabbage, pieplant, tomatoes, and radishes.

To prepare the ground for planting we use a disk spring-tooth harrow and a drag, going over it until it is in good condition for planting. Then comes the marking out the rows for planting. Here is where one of the main points lie in making a beautiful garden. The rows mnst be straight and equal distances apart. For this we use a wheel plow for all the garden except where the potatoes are to be planted.

Then comes the planting. Of course it is not all planted at the same time. Next the road we plant two or three rows of flowers which add very much to the appearance of the garden, then the other things are planted where they will be the handiest to harvest.

The cultivation of the garden is done almost exclusively with a wheel plow and hoe, except the potatoes, which are plowed with a horse cnltivator.

Uses Good Seed

Strawberries Will Add to Income

By MRS. G. B. RICHARDSON

NOTHING pays so well for the amount of space used and the time devoted to it as the farm garden. Every farmer should make the garden snpply the table with fresh vegetables dnring the growing season, and enough to can and store for winter nse. In planning for the home garden it is well to estimate carefnlly the amonnt of vegetables needed and the varieties most liked, and not waste energy in raising more than can be utilized or the kinds the family does not particnlarly like.

The children should be allowed to have a few things to plant, to look after and hoe. You will be surprised at the amount of work they can do and the enthnsiasm with which they do it. A garden should be abont twice as long as wide, for the convenience of turning a horse or team at the ends. Garden-seed orders should be sent early to the seedsmen. It is poor policy to delay the pnrchase of seeds until planting time. First, becanse later in the season work is too pressing to take time to decide what is best to get, and it is also essential that some of onr seeds be sown within the next month or so. It is much cheaper in the end to pay a fair price for seeds and get what we want.

The best plan is to study the catalogues and decide between the reliable firms which have the varieties of the different vegetables and fruits which we think are best adapted to onr conditions. It is the real extra early vegetables that are wanted and appreciated. We are beginning by this time to get tired of canned goods, and how we enjoy early fresh vegetables!

A good garden means a good living and a contented honsekeeper. Be snre to put well-rotted manure on the garden. If the manure is in perfect condition when it is applied half of the garden troubles will be solved. The plants will have food and the ground will become mellow and easy to work because of the thoroughly rotted condition of the manure.

From experience I have learned that for best resnlts the garden should be plowed deep, and not when the soil is wet. A thorough preparation is essential, and the soil should be harrowed and rolled until it is in fine order. The cultivation should be level, shallow, and frequent. Cultivate once a week, and after every rain as soon as the soil is dry enough. Do not let a crust form. It is useless to tell what varieties to plant, as everyone has his or her favorites. I for several weeks continne planting many vegetables, snch as corn, beans, and peas. I try to have all of them fresh until frost.

A good garden will furnish a snpply of vegetables the entire year. Don't leave out the strawberry bed. One hnndred and fifty plants of several varieties will furnish you with all the berries that you can use dnring the berry season, and many to can too. No crop gives better returns for labor expended than the strawberry.

Every farmer can make the garden supply the table with fresh vegetables during the growing season and enough to can and to store for winter use. The staple vegetables will prove the most satisfactory

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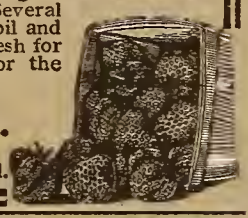

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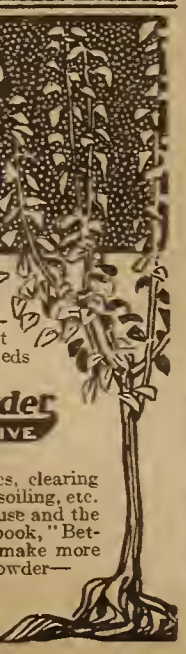

Trees planted in blasted holes developed deeper and stronger root systems than those in spade-dug holes, the N. J. Experiment Station found. Trees in blasted beds bear two years earlier.

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Money From Gardens

Readers Tell of Success They Have Had

To Get Higher Prices

By Ray A. Fuller

LAST summer several farmers in this vicinity decided to co-operate in building a warehonse whereby we could market onr prodnce in snfficient qnantities to pay for shipping and see if we conld not get better prices than we had been receiving.

We organized by selecting a president, secretary, treasurer, and five directors. Having incorporated the company under the laws of the State of Michigan, we issned stock at $10 a share, with a limit of five shares to any one member, and bnilt a warehouse 30x60 feet, two stories high, with 11-foot basement. The building has a capacity of 18,000 bushels of potatoes, exclnsive of the upper story.

We hired a manager by the year to run the house, and the business has already become so large that he has nearly all that he can do alone. I bought two shares, which cost me $20. I sold 700 bushels of potatoes at 10 cents a bushel more than I would have received had I marketed them in the usnal manner. also ten bushels of Red Kidney beans at 50 cents a bnshel above the usual market price. So my warehonse stock brought me a profit of $75. I purchased flonr at a saving of one-half cent a ponnd, shelled and cracked corn at a saving of 25 cents a 100 ponnds, and the same conld be said of middlings, oil meal, and cottonseed meal, should I desire to purchase any of those articles.

The above is jnst a statement for last year only.

This is the first time in my life that I am aware that any of my money has given me 400 per cent profit in one season.

Makes a Hotbed

By A. H. Arnold

HERE in South Carolina, farmers buy their early potato plants from Florida because they think they cannot grow them at home early enongh. They also send away for tomato plants. I believed they could both be grown at home, so I pnrchased one bnshel of sweet potatoes at $1, and one paper of tomato seed at five cents.

I made a box ten inches wide by three feet long, filled it with a mixture of one part sand, one part fine manure, and two parts soil, sowed my tomato seed in this January 1st, and placed box in a south window.

Early in Febrnary I made a hotbed of stable manure and cottonseed by packing firmly on top of ground, using 10-inch boards aronnd. I bedded my potatoes by laying them on top of this hotbed and covering with pulverized manure, using no dirt.

My plants were ready for market before the Florida ones could be secnred. I sold potato slips the first week in April, getting 25 cents per hundred. From my investment of $1.05 I sold $7.85 worth of potato slips and $1.20 worth of tomato plants, besides using many of the plants for my own garden.

Sprayer Pays Big Return

By D. E. Brite

IN 1910 I bonght a farm in southwest Missouri on which there was a 17-acre apple orchard. So far as the orchard was concerned it was a losing proposition, for though it bloomed heavily the fruit always fell off, and I did not have apples enongh for my own use.

In the spring of 1914 I bought a half interest in a power sprayer. My share of the cost of the machine, with the spray material I used, was abont $150. I applied three sprays, and instead of faulty apples all falling, I picked from my orchard about 2,500 bnshels of marketable apples. Besides my own orchard I helped spray another one, and got 300 bushels from it as my share.

These apples sold at 50 cents to $1 a bushel, according to variety. About 100 bushels of cnlls left in the orchard were hauled out at 25 cents a bushel. My partner had the same excellent resnlts from spraying in his orchard. In all our one machine sprayed trees that produced 7,000 bnshels of apples that year.

The following year, 1915, I sprayed again, and similar resnlts were obtained. I graded my apples and sold the small ones at 60 and 75 cents a bnshel, and the large ones at $1 and $1.25 a bnshel.

After the spraying season is over, we hitch the engine to a power washer, and it does the washing. This power sprayer is a permanent investment, for with proper care the machine will last many years, and so will the orchard, as well as a young orchard now growing.

A Widow; a Small Farm

By Mrs. E. McFadden

A FEW years ago I was left with a son twelve years old to depend on my own resources for a livelihood. With only a few hnndred dollars capital I decided to buy a small connlry place with a few acres of gronnd. The place I bought sold at a sacrifice. The honse was old, but the soil very fertile.

I remodeled the honse at small expense, which made a very comfortable home. It was located between two snbnrbs which afforded a good market to dispose of first-class products at very fancy prices. With very little expense for labor, and with plenty of will-power, I think I have made quite a snccess.

My advice, if yon have a few dollars to invest, try the soil. With good common sense and a little jndgment you will find it to be a profitable move.

Strawberries Return $46

By Mrs. D. D. Chapin

I PAID $1 for 200 strawberry plants of the Crescent and Mt. Vernon varieties. I planted them in well-prepared ground in the spring. That season all the bnds and blossoms were carefully picked off so that the roots might become well established and retain their strength to produce the new plants.

At the end of the growing season the plants stood in fine matted rows. They had been kept well cnltivated, and were free from weeds.

When the ground had frozen, the plants were covered with wild hay, which I prefer instead of straw or tame hay because it contains very few seeds. In the spring the hay was loosened with a fork, and a part of it was removed. Enongh hay was left on the plants to keep them from beginning to grow until there wonld be no danger that the frost would injure the blossoms.

A frost will not kill the blossoms, but the centers will become dark brown, and yon may be certain those flowers will produce no fruit.

The remainder of the hay was lifted off the plants and worked into the open spaces, and left to cover the ground between the rows.

A light mulch on the ground kept the frnit clean and made the picking more pleasant. The hay also helped to keep down the weeds and conserve the moisture. My first crop was 224 qnarts of fine berries.

I used a large share of them at home for table and canning. The surplns was sold at 12½ cents a quart. At this rate, the entire crop was worth $28, and I still had the plants in good condition to raise another crop.

The second year the season was not as favorable, bnt I gathered 144 quarts. The returns for the $1 invested was $46 in three years' time.

I have made no allowance for time spent in raising and gathering the crops, bnt any farmer's family will agree with me that the satisfaction of having an abundance of fresh and canned berries is reward enough for the time and work required to produce them.

Buys Seed—Wins Prize

By J. W. Griffin

SOME years ago one of the leading seedsmen of Philadelphia introdnced a new cantalonpe. One inducement offered to each purchaser of one-half pound or more of seed at $1.50 a half-pound was a chance on a $50 prize for the six most perfect cantaloupes grown from the seed.

I sent for the one-half pound of seed, planted it, and grew a fine crop of melons. When the main part of the crop ripened I gathered, one morning, 100 nice specimens. From them I selected 25 of the best. From those I selected twelve of the finest, and from the twelve I selected six that were exactly alike in every respect. The six jnst filled a half-bnshel splint basket without crowding.

I packed excelsior between them, and around the sides of the basket, to hold them in place, pnt paraffin wax over the wounds where the stems had been pulled off, and fastened a piece of pink netting over them. Then I sent them to the seedsman by prepaid express.

On the following New Year's day I received a check from the seedsman for $50. I had won the prize.

Besides the $50, I secured one of the finest varieties of cantaloupes grown, from which I saved enongh seed for succeeding crops. The crop from which these prize specimens were selected sold well on onr retail market, bringing in something near $15, which easily paid for all outlay in prodncing the crop.

There is no better plan than to spend money for pnre-bred seed.

Spends 25 Cents for "Spuds"

By Alice L. Hamlin

WHEN I was about twelve years old my parents lived in the Sacramento Valley in California. A Chinese vegetable peddler used to come weekly to onr door selling vegetables. One day in spring he brought with him young sweet-potato plants which he sold at 25 cents a hnndred. I had just 25 cents of my own, and with this I bought a hundred plants. My younger sister did the same.

Next day we started to plant. We lived on a fruit ranch, and Father gave us a plot of gronnd between some fruit trees, so it was not hard to prepare the ground. Having planted the potatoes, we irrigated them, and then waited for them to grow. And they did grow. We irrigated, and weeded, and watched all throngh the long hot summer days, bnt we had our reward. Snch a crop! We had sweet potatoes for the family and all the hired men till we were all tired of them, and we sold more than ten dollars' worth apiece from the crop besides.

From Prunes—$960

By A. R. Thomas

WHILE living at Whitmore, California, I bought a crop of prunes off a 12-acre orchard for $40. I gathered and dried them, there being 12 tons, and sold them at fonr cents a pound, which amounted to $960. This was in 1910.

That Acre Garden

By Henry Hatch

THE quarter, half, or acre patch of ground commonly called "garden" is often one of the most neglected spots on the farm. Many times it is plowed when too wet, so wet the "boss" will not work in the field; and then it is turned over to the women-folks to struggle on with it the best they can. For all this neglect, more of value is produced on this plot of ground than is produced anywhere else on the farm on land of equal acreage.

I find that it pays to treat the garden well. Instead of pntting it so far from the house that the chickens cannot reach it, thereby making it too unhandy, have it near-by and snrronnded with a good chicken-tight fence. You cannot raise garden and chickens, dncks, geese, and turkeys on the same plot of land. A good fence is the first great necessity.

Garden soil shonld be rich. You do a great deal of work for smaller results if you do not nse enongh manure. Have it well rotted, and if the garden plot will allow it use a spreader to put it on. You will get it spread even then, and it is finely pulverized.

It is a great boost to have the garden plowed in the fall. This is my favorite way; then I manure and plow again in the spring. Fall plowing permits of earlier work in the spring; it also seems to make the soil warmer. Everything starts off quicker and thriftier.

Before the days of cheap and perfect wheel hoes, I planted my garden in wide rows and cultivated with horses hitched to the regular corn cultivator. I still do this with some of the larger stnff, such as sweet corn, popcorn and the like, but there's no nse in using up so much good ground planting the common garden vegetables in this way, for wheel hoes make the work much easier and quicker than the old hand way, so now I plant with an average width of 18 inches between rows, omitting horse cultivation.

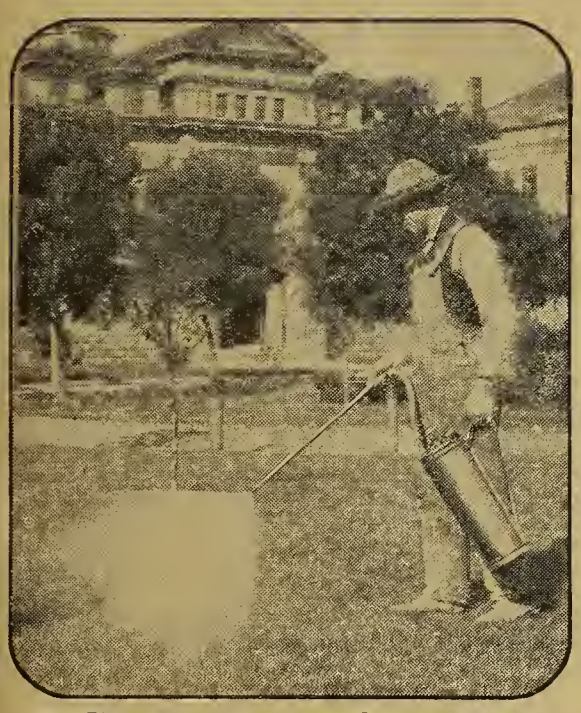
Well-drained ground is best for the garden. If you cannot find any close to the buildings that is well drained, it is np to you to drain it with tiles.

THE letters on this page came from readers who wanted to share with us and with others the story of their work. We receive thousands of letters from subscribers, and we are glad to get every one. Of course we can't print every letter. Here we have selected just a few good ones, and because we are printing them we are paying the writers. Perhaps you are leaving unsaid some very interesting experiences. We should like to have you write us. Address your letter to Editors, Farm and Fireside, Springfield, Ohio.

When It's Spraying Time

THIS is the best way to kill many weeds in grain. Iron sulphate is the solution used. Power to apply it is obtained from an eccentric drive on the axle of the machine. Iron sulphate costs two to four cents a pound. One hundred pounds of iron sulphate mixed with 52 gallons of water will make enough solution to spray an acre. This outfit sprays a strip 22 feet wide

SPRAYED potatoes average 50 per cent heavier yields than unsprayed potatoes in fields where pests are bad. This man is keeping bugs off of a small patch by spraying with a solution composed of three pounds of arsenate of lead and 50 gallons of water. For early and late blight growers use Bordeaux mixture, which is made with five pounds of blue vitriol, five pounds of quicklime, and 50 gallons of water. They begin to spray as soon as the plants are six inches high, and spray five times at two-week intervals



THIS man is not watering the lawn. He is killing dandelions with a brine made by dissolving 15 pounds of common salt in five gallons of water. The same solution is effective for killing Canada thistle and spraying poison ivy. Spraying is most effective when done on warm still days, and at least twenty-four hours before a rain

IN HANDLING large orchards the man without a power sprayer can't give the pests "knock-out drops" fast enough to put them out of business, and keep them out. This is a four-man power outfit, one man to drive and attend the machinery, and three men to spray. A crew of this size can handle 125 acres of orchard, and apply more than 100 wagon loads of spray mixture a week if necessary. A pressure of 200 to 300 pounds to the square inch can be maintained

SPRAYING shrubbery is an easy job. It's such easy work you can keep on a starched collar and not wilt it. This man is giving his rosebushes a shower bath of 10 per cent kerosene emulsion to kill leaf hoppers

THIS 12-nozzle traction sprayer takes four rows at a time, and shoots poison at the pests in each row from three directions—top and two sides. Such a sprayer can be used for beans, cantaloupes, cabbage, celery, or almost any crop planted in rows. By changing the spray bars you can spray currants, berries, and grapes. The machine gets its power from the axle and requires only one man to run it

FARM and FIRESIDE
THE NATIONAL FARM PAPER

Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.

Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price

One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising

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February 26, 1916

Seed Corn Needs Testing

SEED CORN this year is plentiful but poor. Last fall much of the corn grown in the corn-belt States was soft, and even the best seed corn, jndging from outside appearance, is of uncertain germinating quality. P. G. Holden, the noted corn expert, issnes the warning, "It is surprising how low in germination this year's seed corn is."

If yon've never tested your seed corn before, this is a good time to begin. The principle of seed-corn testing is simple. All the corn on any ear is about of the same germinating strength. Remove several kernels from different places on the ear and pnt them in a moist warm place, such as in moist sawdust, or wrap them in a damp cloth. Do this for all the ears yon are going to nse for seed. Nnmber each set of kernels you are testing, and give the same number to the ear from which the kernels were taken. If the kernels spront vigorously in a week's time, save the corresponding ear. If they don't sprout vigoronsly, discard the ears that snch kernels came from. Seed-corn testing costs yon nothing bnt your time, and may save you the wasted labor of preparing for, planting, and cultivating a partial or rnnty crop. Do it now.

El Paso as Packing Center

THE meat-packing business seems to be pushing west. Stocks of canned meats have been heavily drawn on for European relief, and are now said to be the lowest in years. The relnctance of large ranch operators in the Southwest to ship has also been noticed. So it is not surprising to learn that El Paso, Texas, is now making an effort to deserve the title of "Packingtown."

One large packing house has already invested $100,000 in yards and cattle-handling facilities there, while the El Paso Chamber of Commerce, backed by eight of the ten banks, is now raising funds to bnild the first nnit of a modern packing establishment.

The quality of Western range cattle has improved considerably lately, and stockmen are anxious for a good local market. The tremendons growth of the sonthwest cities justifies the belief that such a market will be successful..

El Paso is also the logical market for live stock raised in northern Mexico. At present the cattle, sheep, hogs, and goats coming into El Paso from Mexico nnmber close to 100,000 annually, and with a well-developed market this figure would no donbt be enormonsly increased.

Tax on Gasoline Proposed

THE proposal of the administration at Washington to impose a revenue tax on gasoline, kerosene, crnde oil, and antomobiles has been received with a storm of protest. A tax of a cent a gallon on gasoline and kerosene, 10 cents a barrel on crnde oil, and $5 for each automobile wonld raise abont $80,000,000. Bnt far from being a measnre calculated to tap the treasuries of the Standard Oil Company and other large industries, this proposed tax is a levy on the light, fnel, and power of the nation, and especially of farmers. It affects the widow with a kerosene stove and the renter with a gasoline engine.

The blow of such a tax wonld rebound from the great oil corporations and strike the man who is trying to improve his farm by using a tractor. Protests against—or endorsements of—the proposed bill should be addressed to your own Senator or Congressman.

What Farmers Need Most

"THE farm is vastly more than a bnsiness enterprise: it is a home, a social and civic center—the most important nnit of civilization. The success of a farm home is based on the success of the farm business."

This is the expression of Bulletin 704 of the United States Department of Agricultnre. Its anthor is Carl Vrooman, assistant secretary. Speaking with the public in mind and with the experience and training of the specialists of the Department back of him, Mr. Vrooman says that "what the farmers need most is to know how to make the *science* of agricnlture boost the *business* of farming."

With that as a basis for thought, the bulletin takes np all of the work of the farm in its completeness—soil fertility, live stock, the home and the field. It deserves to be read by everyone on the farm, for it points to better money-making methods and better home life.

Why Not Shorter Terms?

THE question as to who is going to finance the implement business is before the men mannfactnring farm machinery. The question is raised becanse of the methods used by concerns selling other manufactured products.

Other conveniences and luxuries are sold for cash, say these implement men, and still the farmer wants his machinery on long time. That is the way he has been in the habit of getting it.

When we consider the fact that the price of a good motor car for which one has to pay cash will cost as much as all the implements on a well-stocked 80-acre farm, we mnst surely feel that farm machinery, to which the farmer mnst look for production, should sell on the basis of cash. At least, the manufacturers, the dealers, and the farmers shonld be working toward that ideal.

As one manufacturer pnts it: "The practice of carrying unsold goods from spring until fall and from fall to spring is not practiced by any other standard industry, and is nnsonnd in principle. It all goes to promote overloading the dealer and forcing on the farmer what he does not need."

"WILL it work?" is the first and natural question to ask when someone says to you that you ought to spray. This photograph shows what iron sulphate will do when it is used on small grain to kill the weeds. The weedy strip on the right was not sprayed; all the rest of the field was. Does the photograph not answer the question?

Our Letter Box

Answer to Taxation Question

FARM AND FIRESIDE: In the article "Profit from Land," Mr. Hughes asks the qnestion, "Why shonld the non-resident owner of land who does nothing to improve his property reap a large profit on the increase in value of the land dne to the efforts of others who bring in new settlers and make it a better neighborhood?"

Since Mr. Hnghes asks for a remedy, I will give a partial solution which has been a part of modern tax legislation in Germany and England. In Germany many cities tax the difference between the bnying and selling price of land from three to five per cent. In England the difference is taxed to the extent of 20 per cent. This tax is also dne on the death of the owner, when the property is reassessed. This is known as the unearned increment tax. THOS. P. PAGE, Utah.

Is Mr. Cavanagh Wrong?

DEAR EDITOR: On page 3 of January 1st FARM AND FIRESIDE appears an article giving in glowing terms an account of how Mr. Cavanagh is snceeeding with light applications of fertilizer in increasing his crops. He applies 125 ponnds per acre of a 2-8-2 fertilizer which would furnish less than three pounds each of potash and nitrogen and about ten pounds of phosphoric acid, and takes off 60 bnshels of corn which wonld carry with it 37 pounds of phosphoric acid, 80 pounds of nitrogen, and 96 pounds of potash, and from the reading of the article he expects to do this from year to year, and yet his soil will not decrease in fertility. This is an unreasonable conclusion, and he will certainly find his mistake in a few years.

I am not dispnting the results he has got so far, but it is evident that this cannot continne.

Others have got good results from fertilizers for a few years, then the fertilizer has failed them. The use of commercial fertilizer is all right, bnt it mnst be nsed with judgment in a way that the soil will keep the proper balance, or rather to balance up the plant food in the soil, and a systematic rotation practiced that will keep up the nitrogen supply and the humus in the soil, else the fertilizer bills will get too heavy to be profitable and the soil will become dead.

Mr. Cavanagh has not had experience with fertilizers for a long enongh time to be able to jndge the permanent effect npon his soil. A. J. LEGG, West Virginia.

This Did Us Good

EDITORS FARM AND FIRESIDE: I noticed the list of some of yonr old snbscribers to FARM AND FIRESIDE, and I think that I have been a snbscriber and reader longer than any in the list. My attention was called to the announcement that such a paper was to be pnblished (I think before the first copy was issned), and I subscribed for it, and have taken the paper ever since. Possibly the initials have not been the same always, but it has come to our family ever since. I was so well pleased with the paper that for the first few years every number of the paper was carefully laid away, after it was read, to be reread later, for I feared another one as good wonld never be pnblished again.

I have passed my seventy-seventh milestone, but still enjoy reading FARM AND FIRESIDE. MRS. M. S. H., Ohio.

"Back Up, Old Ironsides!"

DEAR EDITOR: I am in need of more and cheaper power on my farm of 200 acres and have not yet seen any tractor that meets my needs. I think a tractor should be light, compactly bnilt, and be connected closely to plows and other tools so it will tnrn around in a small space. I also want it to tnrn sqnare corners and be able to back into fence corners. F. W. B., Ohio.

Tiling Helps

FARM AND FIRESIDE: The query in FARM AND FIRESIDE of Jannary 1, 1916, in regard to "Tiling Heavy Soils" was noted. I find that many wet fields have very tight soil on account of the soil being "puddled," or run together. This can be taken care of by tiling and deep plowing. If the soil is very tight, quick action can be obtained by covering the tile, two or three inches deep, with gravel. I have got good results by covering the tile with old hay.

J. F. RELF, Nebraska.

How About the Dakotas?

A reader of FARM AND FIRESIDE in Indiana wishes to know the chance of success by taking up a homestead in North or South Dakota. He writes: "Do you think homesteading is profitable? I have heard several stories of the drought, windstorms, and the short season. Can you give me any reliable information concerning snch matters?"

Most North and South Dakota readers who see these questions will answer that there are few desirable homesteads begging for newcomers. Most of the homesteads which a newcomer can secure are relinqnishments, and he is obliged to pay some agent a good commission for being located on such tracts.

Who has encouragement to offer this Indiana reader?

Bits of Good Humor

The Reason Why

A gentleman out motoring with a friend noticed that they were crawling along a thoronghfare where previously they had been accnstomed to go at full speed. He asked why the car was run so slowly.

"Why," explained the driver of the car, "everybody's carrying home garden tools now, and you can't rnn over a man without risking a puncture."

He Stayed

MOTHER—Why don't you yawn when he stays too long? He'll take the hint and go.

DAUGHTER—I did, and he told me what beautiful teeth I had.

Papa's Idea

"Oh, Papa!" exclaimed the joyous girl, as she tapped her boot with a whip, "what do yon think of my new riding habit?"

"Danghter," replied Mr. Growcher, after a solemn survey, "that doesn't look to me like any habit. It looks more like a permanent affliction."

His Last Chance

"It is said," he remarked reflectively, "that women's hands are growing larger."

"Well?" she returned inquiringly.

"Yes," he asserted. "And the worst of it is that there is every likelihood that this tendency will continne."

"Yes?" she said in the same inquiring tone.

"Yes," he repeated. "Yon see, driving and golf, and tennis, and other sports that women have recently taken np are responsible for it."

"In that case," she said with a glance at her own dainty hands, "yon'd better speak quick if yon want a small one."

He realized that it was the opportunity of a lifetime, and he therefore spoke promptly.

Paid His Fee Gladly

"And you," she said to the bachelor who had blnndered into the charity bazaar, "you'll have to pay donble."

"Why?"

"Because you're a bachelor."

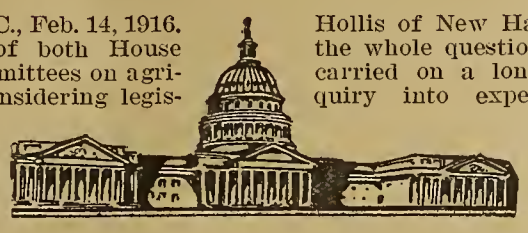
"That's all right," he drawled: "it's worth it."

E-W

A Vaccine for Hogs

Scientist Makes a New Cholera Remedy

By JUDSON C. WELLIVER



WASHINGTON, D. C., Feb. 14, 1916.

THE members of both House and Senate committees on agriculture were considering legislation for the standardization and regulation of hog-cholera serum manufacture when Dr. Duval, chief pathologist of Tulaue University of Louisiana, was presented by Senator Broussard of that State. The Senator vouched for Dr. Duval as a scientist of the best repute, and the committee gave attention.

Very simply and unostentatiously Dr. Duval told his story. He said he had studied hog cholera a loug time, believing that it should be treated as smallpox is in humans, by a vaccinatiou that would produce a varioloid case and immunity. His efforts, he said, had resulted in the production of a vacciue with which he had experimented so extensively that he was prepared to express his absolute convictiou that he could make auy hog absolutely cholera-proof.

As he told his story and submitted to frequent interruptions by committeemen who interpolated questious, Dr. Duval drew from his pocket a little vial containing a grayish powder.

"This is the vaccine," he said, explainiug that there was enough in that little bottle to treat and immunize many hogs. "Why," he added, "I think I have enough of it in my laboratory to treat a great part of all the hogs in the country."

Questions developed that Dr. Duval and his associates have experimeuted to such extent that they are sure the vaccination is practically absolute preveutiou. There is uo danger of giving too large a dose. Any farmer can vaccinate his own hogs; he needs only know euough to catch the pig, scratch its ear, aud rub in a bit of the powder. Its production is inexpensive, and very similar to the manufacture of smallpox vaccine.

Asks for Big-Scale Tests

Perhaps it wouldn't have made so much impression if Dr. Duval had not insisted that he didn't want the Goverument to buy his discovery. He said he was a scientist, not a speculator; he didn't want to make money out of it. The university has paid for his time and studies. He merely asked that Cougress convince itself that he was right, by providing for proper experiments on a large enough scale to insure the accuracy of conclusious; then to take steps to place the vaccine where farmers could know about and use it.

The Senate committee rose promptly to the occasion. It was convinced that Dr. Duval believed all he was saying, and took him at his word; provision was made for the experiments he desired, and if the treatment proves itself, there will be arrangement for goverument indorsement and introductiou of the treatment. There is plenty of scientific support for the theory advanced by Dr. Duval, if he has found what he says he has. The Governmeut, at any rate, is going to know all about it without delay, and then proceed accordingly.

Meanwhile the cholera-serum problem is gettiug attention. Making serums has become a big business, uuder no very effective regulation. The Federal Government has required that serums shipped in interstate commerce must submit to a government test; but vast quauntities are sold inside the State where mauufacture is carried on, and so are exempt from the test. The Department of Agriculture has recommeuded establishment of several central testing plants to inspect serums and affix a government label attesting quality and efficacy, as iu the case of the pure-food aud meat inspection laws. This plan is under consideratiou by the Congress committees, and likely to be adopted, whether or not anything comes of the Duval vaccine discovery. It is expected that $400,000 or $500,000 will be appropriated for the several central testing plants.

Seuator Oweu of Oklahoma tells me that within a very short time, perhaps before this appears in print, he expects the banking committee of the Senate to report a rural-credits measure. The Senator is chairman of the committee, and was a leader in formulating and passing the Federal Reserve banking legislation. He believes that the measure is of the greatest value to the country, but will not perform its full service until it is supplemented by a law under which cheaper money can be provided for agricultural development. He named, long ago, a subcommittee, headed by Senator Hollis of New Hampshire, to study the whole question. Mr. Hollis has carried on a long, painstaking inquiry into experieuces of other countries, and means to adapt them here; and the resultant legislation is about ready for report.

"I fully expect," said Senator Owen, "that within the next sixty days the measure will have passed the Senate, and that it will become law at the present session of Congress.

One of the important moves iu the direction of greater efficiency in the Department of Agriculture is the effort to provide for another assistant secretary. In recent years the Department has expauded enormously, and its work has falleu into two widely different general classifications. They may be called admiuistrative aud scientific. There is no need for a scientific administration over the busiuess activities, but there is need for business administration.

The live-stock interests have been especially active iu demauding a department executive who could specialize in matters conceruing them, and consumers of meat have been backiug the demand. The foot-and-mouth disease epidemic emphasized the need; the army's requirements of more and better horses have forced attention to the need for more scientific breeding; the certainty that the whole world, after the war, will depend more on the United States to rehabilitate stocks of domestic animals—these and mauy other considerations have emphasized the importance of the live-stock side of farming. Whether or not there shall at length be such a division as will center the business relating to live stock uuder au Assistant Secretary for Auimal Industry, it begins to be pretty appareut that considerable reorgauizatiou of department machinery will be brought about before loug by Cougressional action, aud that at least one uew assistant secretary will be provided.

The House Committee on Roads has reported the Shackleford bill for federal aid to the States in building country roads. Substantially the same measure has been before Congress several years, aud demand for some federal participation in road-building is gettiug stronger.

The Shackleford bill in its present form provides that not over $25,000,000 a year shall be appropriated, to be distributed among the States in the ratio of their population and of their mileage of country roads over which mails are carried. Thus Maine would get $276,000 a year, New York $1,594,000, Kausas $747,000, Texas $1,070,000, California $504,000, and so on. The money is to be expeuded by the state highway department, building roads selected by the State and approved by the Secretary of Agriculture; and the federal coutribution shall not be less than 30 nor over 50 per cent of the cost. The effort of course is to encourage especially the construction of the best types of road, and to provide object lessons in the construction. Tweuty-five millions a year would not go far, but it might induce States and counties to renewed effort, in order to insure that they would get their share of the federal generosity.

May Give More Homesteads

People who have ideas of "going West" and taking up a homestead, after the fashion of our forefathers and grandfathers in the decades after the Civil War, should keep their eyes on legislation looking to giving away vast areas of the public domain. A long list of bills have been introduced, and some favorably reported, giving to the States great areas of the public lands, to be disposed of by them to raise fuuds for road-building, education, aud other purposes. The Western States are making determined efforts to get great slices of the Government's lands turned over to them, and not a few public men from States which contain no public lands are inclined to favor the scheme. They think the States on the whole know better how to get the best development of their lands than Washington does. Measures looking to thus giving the States some 30,000,000 acres of public lands are pending, and there is a good chance that some of these will pass, uow or in some session of the near future. There are also pending various measures to permit homesteads of areas up to 320 and even 640 acres to be taken up, in the remaining public lands, on the theory that the 160-acre homestead is too small, in semi-arid regious, to be a working industrial unit.

EW

Special Sale during January and February

Buggies and Engines

We are making special inducements to early buyers during January and February that will enable you to make a bigger saving in the purchase of an American Beauty Buggy or an Economy Engine than you can make at any other time of the year.

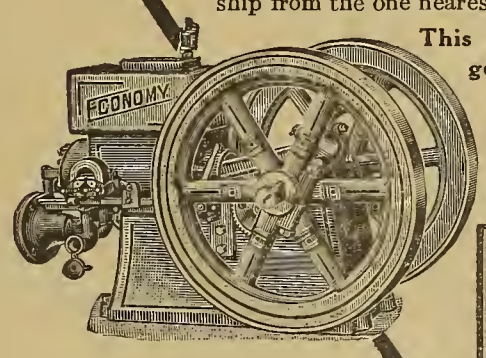
Don't buy a buggy or engine until you have seen this special proposition, as it means a big saving to you.

If you are interested in a Gasoline Engine, write for our special January and February Engine Proposition No. 72F80.

If you are interested in Buggies, write for our special January and February offer on American Beauty Buggies No. 72F80.

Shipped From a City Near You.

We carry six styles of American Beauty Buggies and a full line of Engines, Trucks, Saw Rigs, Grinders and Pumping Outfits in fifteen different cities and we ship from the one nearest you.



This special proposition good during January and February only. Write for it today.

Sears, Roebuck and Co. Chicago, Ill.

You Save Money on Rubber Footwear If You Look for the Red Ball

When you see the Red Ball you can recognize sturdy old "Ball-Band." It's the Rubber Footwear Reliance of over eight and one-half million men. Over 50,000 stores sell it. Nearly every man who buys rubbers knows "Ball-Band." Every spot where extra strain comes on a

"BALL (Red) BAND" TRADE MARK

is made strong. "Ball-Band" Rubber Footwear is made over a natural last. "Ball-Band" Boots are vacuum cured. During the vulcanizing this process causes a tremendous pressure on the fabric and rubber and makes the boot one solid piece.

Write for Free Illustrated Booklet **"More Days Wear"**

Get out of "Ball-Band" all the good service that we put into it. Knowing how to treat rubber footwear adds to its life. The book tells you how. Send for it.

Mishawaka Woolen Mfg. Co., 305 Water St., Mishawaka, Ind.

"The House That Pays Millions for Quality"

Something New

"Ball-Band" Light Weight Rubbers for street wear in Men's, Women's and Children's sizes. They are "Ball-Band" Quality and Value. Look for the Red Ball on the sole.

Heavy Mail at Hickory, N. C.

International Harvester Cream Separators Lily—Primrose

DO you realize the great interest there is in modern, profit-building dairy methods just now? At a big Farmers' Union Meeting, comprising 18 counties in North Carolina, 20 of our booklets, "Facts and Figures on Dairying," were passed through the crowd from man to man. Those desiring copies were asked to write to the Catawba Creamery, Hickory, North Carolina.

In 25 days, 462 requests for booklets were received.

Farmers are realizing that three cows with a good cream separator are as profitable as four without one. A good separator is one that gets all the cream down to one drop in each gallon of skim milk. That's efficiency—and that's the reason for the popularity of **International Harvester separators, Lily** and **Primrose.**

Lily and **Primrose separators** skim to this fine standard for years, because they are built on a sane design, strong, simple, reliable, sanitary. The few easy adjustments necessary, anyone can make. The single automatic oiling arrangement takes care of every bearing and sidesteps trouble.

"Facts and Figures on Dairying" will help you, too. Write for it and for a catalogue. See the **I H C** dealer who can furnish you with a **Lily** or a **Primrose separator.**

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2, 3, 4, 5 and 6-Horse Eveners
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Bumper Grain Crops
Good Markets — High Prices
Prizes Awarded to Western Canada for Wheat, Oats, Barley, Alfalfa and Grasses

The winnings of Western Canada at the Soil Products Exposition at Denver were easily made. The list comprised Wheat, Oats, Barley and Grasses, the most important being the prizes for Wheat and Oats and sweep stake on Alfalfa.

No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

Western Canada produced in 1915 one-third as much wheat as all of the United States, or over 300,000,000 bushels.

Canada in proportion to population has a greater exportable surplus of wheat this year than any country in the world, and at present prices you can figure out the revenue for the producer.

In Western Canada you will find good markets, splendid schools, exceptional social conditions, perfect climate, and other great attractions. **There is no war tax on land and no conscription.**

Send for illustrated pamphlet and ask for reduced railway rates, information as to best locations, etc. Address

M. V. McINNES
178 Jefferson Ave., Detroit, Mich.
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Save Those Animals!

When your animals show symptoms of uneasiness, this is the time to begin treatment.

Shivering—Difficult Breathing—Pawing
Lameness — Inflammation — Soreness

When these allied aches come, get your best "Insurance" in immediate relief against further complications by a $1.00 investment in a remedy tested by time for *all* time.

Sloan's Liniment

"Penetrates to the sore spot"

Live Stock—Dairy

About Milking Machines

MILKING MACHINES were invented as early as 1860.

The first practical machine appeared about 1892, but not until about 1910 were milking machines considered past the experimental stage.

The natural way to get milk from a cow is by suction and pressure. In this respect milking machines are more natural than the rough squeezing and pulling of hand milking.

A milking machine is in principle a pneumatic pump attached to a cow's udder. Various patented attachments and improvements distinguish the various machines from each other.

The milking machines now on the market are of three kinds.

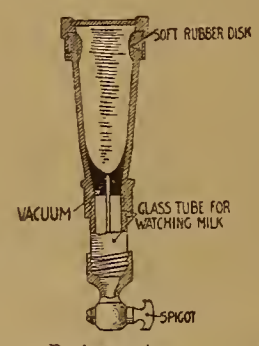
One is the vacuum tank, with piping system.

Another is the individual pump, with drive rods on top of stanchion.

And the third is the foot-power type.

The cost ranges from $70 for a foot-power machine up to about $600 for a thoroughly high-class vacuum-tank and pipe system.

Milking machines do not dry up the



During suction

In this teat cup intermittent suction draws the milk. By means of spigots you can at will turn off the suction from any teat

cows. One cow has been successfully milked for ten years with one.

Some cows give more when milked by machinery, and others less; but, on an average, milking machines secure the same amount as a good hand milker will obtain.

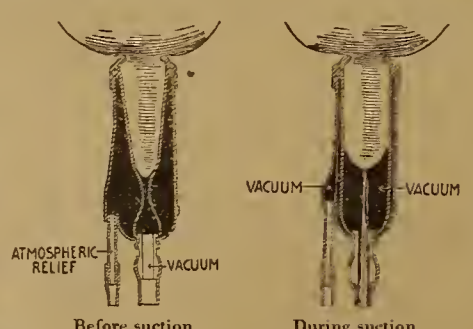
With a well-managed machine the strippings by hand after machine milking will be as low as one twentieth of a pint per cow.

One company advises against hand stripping.

By a simple adjustment some milking machines will milk a cow having three teats.

Kicking cows, cows with sore teats, hard milkers, and also heifers are more easily milked, as a rule, by machines than by hand.

Milking machines have been successfully used in official tests which admitted cows to advanced registry.



Before suction During suction

This teat cup is constructed with the idea of manipulating the teat by atmospheric pressure and drawing the milk by vacuum

Milking machines are most practical in large dairies.

Some users say that a 20-cow herd is the smallest in which machines are practical, others say that a 10-cow herd can profitably be machine-milked.

With a herd of less than ten cows the work of getting the machines ready, and washing them after using, may overbalance the saving of time.

The best milking machines will milk a cow in from two and a half to six minutes, but it is usually best to strip the cows by hand.

Stripping takes from fifteen seconds to a minute.

Milking machines can be had for milking either one or two cows at a time.

Most machines are provided with an inspection glass by which the operator can see when the milk flow stops.

No harm is done, however, if the milking machine is left on after the cow has been milked dry.

Milking machines enable the man whose dairy is limited in size by local labor conditions profitably to keep more cows.

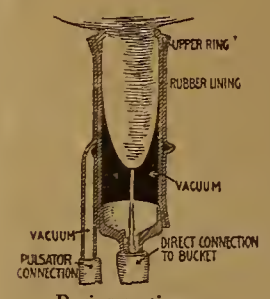
Milking machines are not supposed to break speed records, but rather to make the work more pleasant and easy.

The machines are not automatic. They need close attention and rather skilled care.

The quality of milk obtained by careful hand milking and competent machine milking is about the same.

The most particular work in the use of milking machines is keeping the machines and tubing clean.

A ten per cent lime solution is a good disinfectant for milking-machine parts.



During suction

The pulsator causes alternate suction and pressure, the compressed air being admitted through the same tube used for vacuum. This method imitates the sucking and upward squeezing of the calf

A five per cent solution of calcium chloride saturated with common salt is also officially approved.

Brushes are furnished for cleaning all the milking-machine parts and even the rubber tubing.

The more milk a cow gives, the easier it is, as a rule, to get her accustomed to a milking machine.

One man can easily milk four cows at once with a milking machine, and a good man can milk six or eight at once.

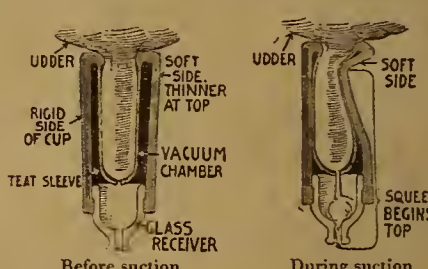
In a New York experiment, one man using a milking machine milked 50 cows night and morning without difficulty.

Milking machines that are poorly managed will bring down the yields, but anyone who is careful, intelligent, and willing to follow instructions can get good results.

Average mechanical ability is desirable also.

Electric motors are the best power, but gasoline engines and tread power are also satisfactory for operating milking machines.

A mechanical pulsator automatically starts and stops the pressure or suction at about the same rate that a calf sucks.



Before suction During suction

Intermittent suction in this style of teat cup causes soft side to press against teat, forcing the milk out

This is about 60 times a minute for hard milkers and 90 times for easy milkers.

Most failures with milking machines are due to poor installation or neglecting to strip the cows.

Repairs on milking machines are limited mostly to replacing the rubber tubes.

The cost of repairs will usually range from one to twenty-five dollars a year.

With the vacuum pump and piping system the time to prepare two machines for use is about four minutes, and the time to clean them about fifteen minutes. In about an hour and a half one man can milk 30 cows.

For further information on milking machines address Dairy Editor, FARM AND FIRESIDE, Springfield, Ohio. All persons using milking machines are invited to contribute their experiences.

Horse-Export Situation

AN IMPRESSIVE testimony to the bigness of American live-stock interests was afforded recently. A London dispatch stated that Great Britain alone had bought $60,000,000 worth of horses and mules in America since the war started. Just about the same day the agricultural department declared that, notwithstanding the unprecedented sales abroad, there were just as many horses and mules left in the country as when the war started.

All the European countries are taking measures to keep their supply of horses. Various plans to encourage breeding, restore racing to favor, give prizes for good animals, purchase good stallions with public funds and permit them to be used by private breeders, and the like, are being organized in England and France. The horse question is going to be one of Europe's hardest after the war.

E

Every week sees the supply of horses cut down fearfully. The importations of American animals to Europe are expected to increase very fast, beginning with the opening of the spring campaigning.

High-Dollar Lambs

By O. A. Renahan

I SEEM to be succeeding with my small flock. Last year I had only three single lambs; the balance were twins. All the lambs lived and did well. I made every effort to insure having lambs strong when dropped, and to save them all.

I contracted with a local buyer to have my lambs go when "grass closes," for $7.50 per hundredweight. They were delivered at the local yards November 20th, and averaged 96⅔ pounds each.

My wool sold for 33 cents a pound, which brought my income up to $12.06 per ewe. For the three previous years my income per ewe averaged $10.77.

This year I sold two of my original ewes with the lambs. The two weighed 300 pounds, and brought 5 cents a pound after giving me four years' valuable service. These old ewes actually increased in value 50 per cent since I purchased them. You may be sure I did not neglect to fill the vacancies with ewe lambs.

Last fall I got next to a plan of making a little easy money from feeding lambs. A neighbor who knows sheep and sheep-handling from A to Z was driving 110 lambs by my place, purchased from our local stock buyer for 7 cents a pound. He had contracted to sell them back to this buyer for 7¼ cents per pound when "grass closes." When purchased, the lambs averaged 60 pounds each.

Each ewe earned $12.06 for the year

This neighbor told me that he had some clover which was not well filled for seed, and some spring-seeded grass clover which he believed the lambs would make fair gains on. He figured he could make them average 80 pounds on this pasture, and thus get a profit of $1.60 per head. I learned later that his lambs brought him $180 more than he paid, or $4 above his estimate.

Uncle Sam's Farm Help

By B. F. W. Thorpe

THE Government through the U. S. Department of Labor is helping to bring the job and the jobless together by means of distributing branches located in every city throughout the country.

The government inspectors in charge of these branches stand ready at all times to help farmers and others in want of farm help to get in touch with men and women in search of farm work, farms for rental, etc.

Through the courtesy of the inspector in charge of the Cleveland branch of the Department of Labor, Mr. J. A. Fluckey, we are able to furnish actual examples of the way these government employment agencies are working.

Inspector Fluckey writes:

On September 28th a letter was received from Mr. F. B. G. of Ashland County, Ohio, in which he requested to he furnished as soon as possible with a man for corn huskiug and cutting, offering to pay the hand at the rate of $60 for the next two months and, if the man proved satisfactory and was satisfied, to keep him hy the year. On Octoher 6th, S. B., a man of the Polish race, five years from Austria, applied at this office for employment. He stated he had had four years' experience on farms in this country, and when explained the terms of Mr. F. G. B.'s proposition was eager to accept same. He was therefore given directions, and hy a representative of this office placed on the proper train, and we have heard from Mr. F. G. B. that the man was satisfactorily employed.

Mr. A. W. C. of Stark County forwarded a formal application, upon a hlank furnished hy this office, requesting to be furnished with a good man for his celery and onion farm. He was willing to take a "green" hand, and to pay him $20 per month, board, lodging, and washing, and to increase his pay later as the man might prove worthy. The early part of July, L. K. L., a German, who had heen twelve years in this country, who had heen a clerk in a factory but, on account of confining nature of the work, desired to change to a farm, was directed to this man. We received word from the farm that "the German fellow you sent is doing all right."

Mr. Wm. L. B. of Carroll County writes that help is very scarce. He is very much in need of a good man to assist in taking care of the corn. Furthermore, he wishes a married mau, and desires him to bring along his wife, that she may assist about the housework. He offers $15 per month for three months duriug the winter, and $20 per month for nine months during the summer, for the man; and $2 per week for the wife. He is so much in earnest iu securing help that he furnishes this office with a mouey order to pay cost of transportation of the couple he wishes. Ahout the same time there comes to this office a mau and a wife. Plainly he is a lahoriug man. They are without funds and ueed employmeut the worst way. He states he has worked many years on a farm, and is willing to accept the terms of the farmer in Carroll County. His wife expresses her williugness to assist in the housework for the wages offered. To iusure that these persons will go to Carroll County, after tickets have heen purchased, their baggage is checked to the farmer and the baggage check mailed to him. This is done because they are using his money for transportatiou, and it is desired that they report to him as they promised. These people, of course, arrived and were employed.

Last January, upou his request, Mr. H. E. M. of Holmes County was furnished with a farm hand. During October he found he could use another man to good advantage, and again called upon this office for his help, offeriug $12.50 per mouth for three months during the winter, and $25 per month for uine months during the summer, with board, lodging, and washing. Shortly thereafter, Mr. Ben P., a young man of Hehrew race, applied at this office for any kind of work. He stated he had served two years on farms in this country, was able to milk, and understood all work done on the ordinary farm. As Mr. H. E. M. had mentioned the uatioualities from which he would accept his help, and as Hebrew was not among them, I communicated with him regarding the youug man, and he consented to give him a try-out. The young man is clean, ueat, and evidently very desirous of stayiug on a farm, and there is little doubt but that he will make good with the Holmes County farmer.

Many more such examples are among our records.

Be Your Own Butcher

By A. M. Paterson

CURED meats can be handled by the farmer individually, as modern methods of slaughtering, curing, and handling have been so perfected and simplified that any average person can have a supply of choice meat on hand at all times, and thus secure the satisfaction of knowing whence comes the meat he uses on his own table.

The prerequisites of good meat are health, degree of finish, breeding, and general care of the animal before slaughter. In the selection of an animal to be slaughtered for food, health should be given the first consideration, as meat from animals in poor health has a tendency to be sticky, stringy, dark in color, hard to cure, difficult to keep after curing, and it may also have an injurious effect upon those who might use it for food. No matter how young or how fat the animal is, if it is not in perfect health a high quality of meat cannot be obtained. A great many times animals are slaughtered for food that are affected with diseases that may be transmitted to man. This being the case, only healthy animals should ever be used for food. There may be little danger from the use of such carcasses if the animal is in the early stages of the disease, but as it is hard to tell when the disease becomes virulent the safer method is not to use for food any animal in poor health. Broken bones or any derangement of the system that may cause a rise of temperature of two or more degrees will have an injurious effect on the meat which makes it unwholesome for food.

First-class meat cannot be obtained from animals in poor flesh. A reasonable amount of fat must be present to give the meat juiciness and flavor. However, fat is not as essential for good meat as is the health of the animal. Never kill an animal that is losing in flesh. When such a condition prevails the muscle fibers are shrinking in volume, and the meat contains correspondingly less water. Hence it is tougher and drier. When an animal is gaining in flesh the opposite condition prevails, and a better quality of meat is obtained.

While meat of high quality is largely dependent upon the condition and health of the animal, breeding should not be overlooked. Good meat is seldom obtained from the scrub or poorly bred animal. The admixture of fat and lean, or marbling as it is termed, is never as good

It costs less to buy a DE LAVAL than to buy experience

EACH year some 40,000 farmers, who have bought at one time or another "cheap" cream separators, discard the inferior, cream wasting machines and replace them with clean skimming De Lavals.

These men bought the "cheap" machines because they thought they were "good enough" or "just as good" and that by purchasing such machines they could save a little money. They actually would have been better off in most cases had they bought no separators for they lost most of the money they spent for the "cheap" machines, besides all the cream these machines have failed to get out of the milk.

No one ever saved money using a "cheap" cream wasting separator or an old or half worn-out machine. No one ever got back the money spent for such a machine by continuing to use it. Those who bought "cheap" machines and got out of the difficulty best are the ones who quickly discovered their mistake, discarded the inferior machines and put in real cream separators—De Lavals.

There are nearly 2,000,000 farmers who have bought De Lavals, and every one of these had just as many opportunities to buy "cheap" separators as any one else. They did not do it and are now money ahead. They have avoided paying the high cost of experience, and their De Lavals have paid for themselves many times over. It always pays to buy a separator of proved, known superiority.

The nearest De Laval agent will be glad to let you see and try a De Laval on your own farm, without obligating you in any way. It is better to take advantage of this opportunity than to pay dearly for your cream separator experience. If you don't know the local De Laval agent, simply address the nearest main office as below.

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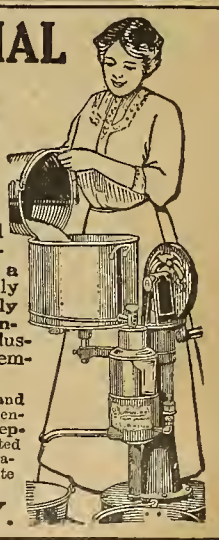

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in the scrub as in the well-bred animal. There seems to be a teudeucy for good breeding, fine bones, soft hair, thin, pliable skin, and thick mellow flesh to go hand in hand, all of which are desirable in the auimal to be used for meat.

When one is selecting an animal to use on his own table there is a tendency to slaughter the older animals and send the young animals to the market because they will bring more money.

It is hard to say at what age the animal will make the best meat, but it is a known fact that the meat from an old, thin animal will be tough and dry. Meat from a very young auimal has a tendeucy to be watery, light in color, and lacking in flavor.

To insure good meat the animal to be slaughtered should be kept off feed from twenty to thirty hours before slaughtering. If the stomach is loaded the system is gorged and the blood driven to the extremities of the veins and capillaries. Under such a coudition the blood will not drain out properly after sticking. If the blood is not thoroughly aud quickly drained from the animal's system a colored, unattractive carcass will be the result.

Food decomposes in the stomach very rapidly after slaughter, and where the dressing is slow the gases tend to give the meat a strong, disagreeable flavor. Plenty of fresh water should be given the animal before slaughter, as it helps to keep the temperature normal and tends to wash the waste material from the stomach. The animal should uever be slaughtered immediately after a long drive, as under such a condition there is liable to be some derangement of the system that may cause the meat to be of inferior quality.

Brothers Pull Together

By Whitney Montgomery

I DIDN'T get in a rut—I was born in one. My father was a smart man, an educated man, and one of the best men that ever lived, but he missed his calling. As a farmer here in Texas he was a failure.

From my earliest recollections, we were in debt. The close of each year found us farther and farther behind, until at last a portion of the farm was mortgaged. My father tried both tenants and hired hands. The first swindled him; the latter shirked their duty.

Things went on in this way until my father's death. Then my only brother, who is two years my senior, and myself—both of us mere boys at that time—took charge of the farm. We hired two wage hands and worked with them. We made a fairly good crop of cotton aud corn the first year. We lived economically, and by raisiug a large portion of our living at home we got through on a grocery account of less than $80 for the entire year, aud there were five of us.

Mother had six Devon milch cows. We took splendid care of them. We sold the bull calves and kept the heifers, and our herd grew rapidly. We also raised enough hogs for our own use, and some to sell. As soon as we had accumulated a little money we paid $50 for a Durham bull calf, and $20 for a Berkshire boar. And to that calf and hog we owe a large portion of the success that pulled us out of the rut.

Since we bought the calf, thirteen years ago, we have sold more than $5,000 worth of cattle, and we have 80 head of high-grade stock cattle left. We raised hogs and cattle in connection with cottou. And when our mother died—seveu years after Father's death—we were able to pay off the mortgage on the farm and buy out the shares of our two sisters, who were both married. Since then we have bought more land.

We now raise cotton, corn, oats, hay, cattle, hogs, chickens, and mules. We also have some native pecan trees that bring us in more than $100 every year, and we raise plenty of vegetables for home use. We have something to sell all the year round.

Our property, my brother's and mine, is still undivided. We got out of the rut by pulling together, and we intend to keep out by the same method.

Wood for Butter Boxes

POPLAR, ash, and spruce have been considered the best woods for making boxes or tubs to hold butter. The U. S. Forest Service, aided by Wisconsin dairy experts, has lately found that cottonwood is as good as any of the others.

Emergency Belt Helps

SOFT iron wire, such as ordinary stovepipe wire, makes a good belt lacing. First punch small holes half an inch apart aud half an inch from the ends of the belt. Then lace with a double row of wire, place on a firm, smooth surface, and pound the wire lacing into the belt.

If a belt persists in slipping on a pulley wheu it is properly tighteued, the best way out of the difficulty is to use a wider belt. It will last enough louger to pay for itself. Among the best emergency preparations to prevent slipping are powdered whiting and beeswax. Powdered resin is a bad thing to use, as it dries a leather belt and causes it to crack.

Young Pigs Have Thumps

THUMPS is a disease of young pigs which kills off the best, and especially the fattest, litters. It comes from overfatness aud lack of exercise. Arrange the affairs of the mother sows so that the pigs will have a good deal of walking to do. The same system will go far to prevent scours, auother fatal trouble with the young porkers. Try to secure as close an approach as practicable to the conditions which pigs live uuder when running with their dams in the woods.

Cow-Testing 31 Years Old

THE first cow-testing association in the world was formed near Vejen, Denmark, in 1885. Iu 1895 Mr. Helmer Rabild of Denmark organized the first cow-testiug associatiou in this country at Fremont, Michigan. Mr. Rabild is now connected with the U. S. Department of Agriculture, and reports 220 such associations in the United States at the close of 1915. Cow-testiug is cooperative in character, and its chief aim is to detect the unprofitable cows.

Six Pounds Butter Daily

THIS Holstein cow is almost entirely white in color, but she is nevertheless a pure-bred and is registered. Her name is Ormsby Jane Segis Aaggie, and she is owned by a New York breeder who purchased her about two years ago for $250. She now claims title to the world's one-day, seven-day, and thirty-day milk record for all breeds.

Her record for 30 days is 3,050 pounds of milk which tests euough to make six

pouuds of butter per day. A four-year-old, she is large even for the Holstein breed, weighing about 1,500 pounds. She is now trying to break the world's yearly record.

Corn-Sheller Improvements

REMOVING the tips and butts of ear corn used for seed has become such a common practice that shellers are now made which make this process easy. Popcorn attachments are also furnished.

Three Acres in Apples

[CONTINUED FROM PAGE 3]

of the box when the arms are extended, the other edge of the table, next to the wall, beiug six inches higher.

We have fouud it impracticable to grade and pack apples at the same time, so the two operations are performed separately. Two grades are made, the firsts being put into boxes on one side of the grader and the seconds on the other, each grade being divided into four sizes for convenience in packing.

Fancy or first-grade apples are practically free from blemishes, and the red varieties are three fourths or more colored. C grade, or secouds, have more or less blemishes, such as frost marks or russet spots, limb rubs, worm stings, scab, slight sunburn, and aphis injury. Baldwin spot, scale, rotting, cracked, or bruised apples are thrown into cull box.

We do most of the grading, but hire the bulk of the packing. Girls, some of them with little or no packing experience, generally do better work than professioual packers. The former are more careful and teachable, and have no preconceived notions as to how the work should be done. However, the fruit must be carried to and taken away from them, while men wait on themselves. The latter will pack 60 to 80 boxes per day, while a woman can be couuted ou to fill 40 to 50 boxes.

The marketing problem is not nearly so simple as it seems. Of course it is easy to turn one's fruit over to an association or to consign it to a commission merchant, but iu most cases the returns are unsatisfactory where either of these courses are followed. The idea of cooperation is all right, and if the growers would do their part and the fruit associations were rightly managed the best possible results would be secured for all concerned. However, thirteen years' experieuce in growing aud selling apples has convinced me that the orchardist who properly grades aud packs his product, and uses good judgment in marketing it, can generally do better than by consigning or by permitting an association to attend to the sales end of his business.

The local and Pacific Coast markets prefer red apples, of which the Spitzenburg brings the highest price. One year we shipped our "Spitz" to Los Angeles, another year to San Diego, while the past seasou two thirds of them were sold to dealers here in Ashland, and the rest were shipped to small towns in northern California. One local dealer took 40 boxes, and another 75, the latter paying $1.40 in bulk, which is equal to $1.75 packed.

The Newtowus are generally sold for export, although one year San Francisco proved the best market for them, and another year Klamath Falls, Oregon. Iu 1913 a straight car was sold for export at $1.50 aud $1.60 per box for the two grades.

Each year a dozen or so boxes of large, perfect apples are sold at $1.75 to $2.25 per box. The past season 20 boxes were sold at $2. These extra fancy boxes are usually sent to distant friends for Christmas presents. A number of boxes have also been sold to the Ashland Commercial Club for display purposes. Culls are retailed at an average price of about 50 cents a bushel.

The cost of picking and packing a box of apples is about as follows:

Box shooks	$0.10½
Making boxes	.01
Picking apples	.06
Hauling apples to packing house	.01½
Grading	.02½
Packing	.05
Wrapping, lining, and layer paper	.03½
Nailing up boxes	.01
Drayage	.01½
Loading car	.02½
Total cost from tree to car	$0.35

Estimated annual cost of caring for Wimer Cove Orchard:

Pruning	$30.00
Spraying	86.00
Water rent	22.00
Thinning	40.00
Propping	7.00
Irrigating	40.00
Total	$225.00

Since no account has beeu kept of the time spent in orchard work, no accurate figures can be given. Four days' work is the allowance for each of the five waterings which the orchard may ueed duriug the season. A good deal of thinniug can be done in connection with the irrigating, siuce the water may sometimes be permitted to run a half-day without attention. The Spitzenburgs require very little thinuiug, and only half of the Newtowns bear full any oue year, on an average, which means that most of the $40 allowed for thinning may be spent on about 50 trees.

During the past ten years this orchard has produced an average of 900 boxes a year. Dividing this into $225 gives 25 ceuts as the cost per box of raising apples. Adding to this 35 cents as the cost of getting the fruit ready for market makes 60 cents. The average price received during the period above mentioned has been about $1.25. Subtracting 60 cents from this leaves a profit of 65 cents, or $585 on an average year's crop. Counting off $40 for overseeing the work of pickiug, packing, and marketing, and $50 for taxes, leaves $495, which is 8¼ per cent on a valuation of $6,000.

The above figures are not given for the purpose of proving that this orchard is worth the price named, which is really higher than the owner's valuation. However, there are other things to consider besides the real or possible profits in putting a price on a property of this kind. For instance, an orchard which, like the one under consideration, is well located in one of the best residence cities in the country is obviously worth much more than a similar property several miles out in the country. The former offers a solution of the problem of how a farmer cau move to town and make a living while educating his children and enjoying other advantages of city life.

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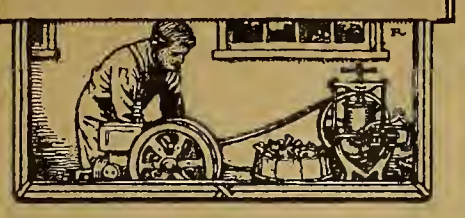

Movable Vine Trellis

FOR growing vines about a frame porch that frequently needs painting, a trellis that can be removed is a great convenience. Ordinary galvanized poultry wire, two 2x1 wooden strips as long as the wire is wide, several screw eyes and screw hooks are all the materials that are needed.

First cut the wire the desired length, as from the porch floor to the eaves. Then neatly fasten the strips to each end of the wire. At the ends of the strips place the screw eyes; then put the hooks at the proper distances apart, wherever the top and bottom of the trellis are to be.

If the vines are annual the trellis can be taken down in the fall, rolled up and stored away until needed again in the spring. ALICE C. HOFFMAN.

Use Snaps, Save Time

ON a single driving harness the neatest way of fastening the reins to the bit rings is with buckles. But in cold weather snaps will save you frozen fingers.

Snaps may not look quite so well, but they are time-savers in hitching up and putting your horse away. Another practical use for snaps is to fasten the hold-backs to the shafts.

CHESTER G. REYNOLDS.

Sliding Gate Saves Room

THIS gate is designed especially for use in stables and stock pens. The sketch shows the simplicity of the construction and how it slides open and shut. The principal advantage of this plan over a swinging gate is that the cattle are not so likely to get in the way of it, and it can be opened and closed much more quickly. HARRY E. WELLS.

Bucksaw is Speedy

I HAVE just put up a stable and hay shed, and did practically all my sawing with a bucksaw. It was much easier to saw with it than with a hand saw, and the work was more quickly done. With a bucksaw you can use both hands, and it isn't so tiresome as with the one-arm hand saw.

For rough work I use the bucksaw ten times where I use a carpenter saw once.

CHESTER G. REYNOLDS.

To Move a Log

OUR State prohibits dragging logs on the highways. This is the way I manage when I want to move a big log. I take the front gear of a wagon, remove one wheel, and load the heavy end of the log on the front gear by rolling the log on a skid. This is usually easily done.

Then I put the small end of the log on a sled made in fifteen minutes from two 5x6 pieces of timber four feet long, and shaped like runners at the front ends. The sled is completed by a strong crosspiece nailed on top. The log rests on the crosspiece.

The runners of the sled are fastened to the front gear by chains.

This way of moving a log is easy and saves the road. HARRY C. PROWELL.

Makes Shoes Non-Skid

NON-SKID shoes are a great convenience in icy weather for walking on wet lumber or on any slippery surface.

Simply take an old pair of shoes with good thick soles and drive carpet tacks in, slanting in all directions.

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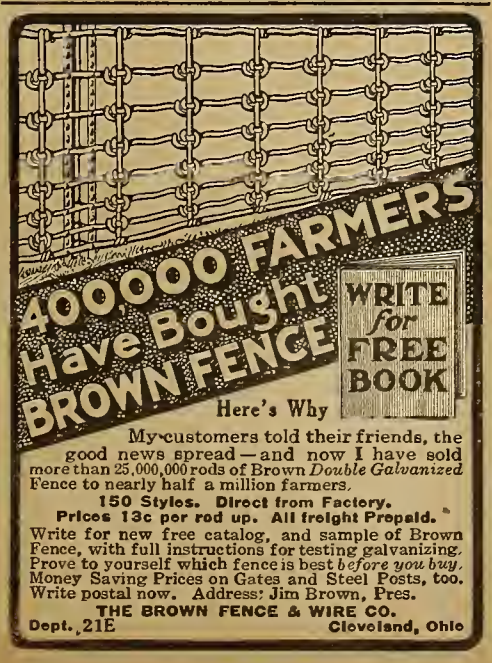

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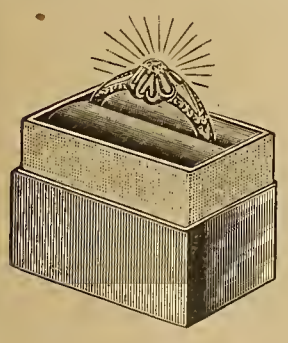

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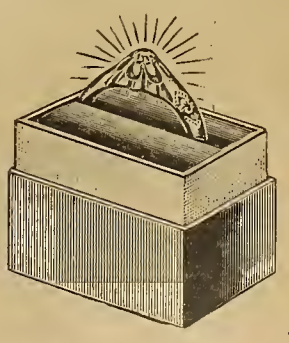

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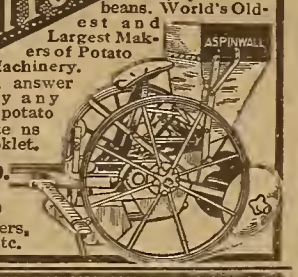

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Farm Notes

Hands That Do Work

By Charles H. Lerrigo, M. D.

CHAPPED hands are not always the result of carelessness. Any skin will chap if neglected, but some will chap with the best of treatment. Chapping is indeed a very mild form of eczema. When it progresses to the point of deep cracks around the nails and knuckles it becomes painful. The most efficient "first aid" for these cracks is the application of a patch of zinc-oxide surgeon's plaster. This covers up the tender nerve ends and gives prompt relief.

But the best treatment for chapping is preventive. The whole skin should be kept vigorous by frequent cold rubs. Whatever water is used for cleansing the hands the last rinsing should always be cold. The soap should be both mild and pure, and be washed off before the towel is used. Always dry the hands thoroughly. A vigorous rubbing one over the other will increase the activity of the glauds so that they will supply their oily secretion and thereby give a protective covering.

An excellent lotion to prevent and cure chapped hands you may make for yourself at small expense. The method of application is to wash and dry the hands and then rub the lotion in thoroughly. If your hands are rough, repeat the treatment two or three times in immediate succession.

Hand Lotion Prevents Roughness

First put one ounce of crushed quince seed in a quart of clear rain water and let it stand all day in some mildly warm place, such as the back of the kitchen range. Then strain to get rid of the seed. Then add four ounces of glycerin, a half-pint of alcohol, and a half-ounce of rose water in such a way as to make a well-blended compound. This will make more than you need for the whole winter's use, and if you give the surplus to your neighbors they will rise up and call you blessed.

A farmer in his sixties has just left my office. His hands reveal his history. Excepting for the web of the fingers they nowhere show the flesh tint of a delicate skin. They are parchment-yellow, and their thick look is endorsed by their horny feel. The nails are broken, blunt, and dense. Can such extremities fill all the functions of the hand?

I have lived on a farm and among farmers enough to know that the farmer cannot nurse his hands. Nevertheless, I insist that he should treat them with respect. Often they are roughly and buuglingly made to do work which could be performed much quicker and better if a pliers, a wrench, or a chisel were brought into play. A husking glove will do much to save the hand, and is no hindrance to quick work. The cotton gloves that sell in every village store at ten cents a pair will save the hands.

My advice to the farmer who would like to preserve his hands is to give them some care. In cold, raw weather treat them to a brisk rub with the hand lotion after washing. Wear cotton gloves for the scratchy, irritating work, and in cold weather always have a pair of good gloves or mittens for driving.

Some Work Hard on Hands

Yet, certaiu kinds of farm work will produce some cracks and cuts in spite of everything. Prompt attention will save ulceration with its attendant pain and disfiguring scars. After the day's work wash the hands thoroughly with a mild soap and warm water, rinse in clear water, then soak a few minutes in water containing a level teaspoonful of boracic acid to the pint. If skin is much lacerated you may then rub in a warm solution of equal parts of linseed oil and lime water, and in very severe cases it is well to soak woolen cloths in this solution and wrap them around the hands.

The most grievous trouble comes from cracks in the skin. I used to apply collodion, but I now get better results from the zinc-oxide adhesive plaster. The pain is due to the exposure of the sensitive nerve ends to the air. The application of the plaster relieves the pain and allows healing to go on under its protection. It should not be applied direct to a raw or ulcerated surface. In such a case apply sterile linen or gauze aud use the plaster above it to retain the dressing. Do not apply adhesive plaster to a hairy surface without first shaving the skin.

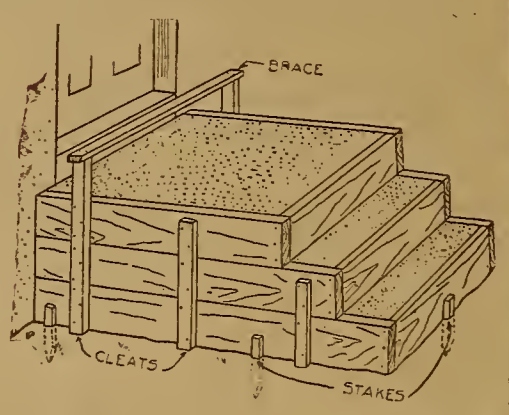
You may have noticed my silence as to antiseptics. They are generally overdone. Their tendeucy—especially if corrosive—is to retard healiug aud turn au ordinary scratch into an ulcer. Even peroxide of hydrogen, if used repeatedly, breaks down healing granulations. It should be used only when pus is present. Boracic acid is a mild and safe antiseptic which will answer well for general use. If something stronger seems necessary, one application of gasoline or turpentine may be made, but it should not be repeated in a clean wound. Tincture of iodine is the antiseptic of choice with most surgeons to-day, but they do not overdo it. They recognize that Nature is the great healer, and that their efforts to assist may easily become obtrusive.

Ship Carp by Carloads

WE ARE prone to jeer at the German carp as the Ben Davis of all the fishes. But the carp trade is so enormous that the big express companies now send them from the interior lakes and rivers to the great cities by the carload in tank cars filled with aërated water in which the fish make their first visit to the great city alive. The Jews of the factory districts are the greatest buyers of carp, and know how to make delicious dishes of them.

Form for Concrete Steps

THE sketch gives one nearly all the information needed, but here are a few directions to make sure of good results. Make each step 8 inches high and the tread 10 inches. The earth under the steps should be excavated 6 inches deep, and the hole filled in with the same concrete of which the steps are made. Then make the entire bottom slab, the end of which will be the bottom step. Then in less than half an hour put the form for the second step in place and make that. Continue till all are finished. Have the concrete dry enough so you can tamp it well, and yet damp enough so a



little water will come to the surface. A good mixture for steps is: 1 sack cement, 2½ cubic feet sand, and 4 cubic feet of pebbles or crushed rock.

Cornstalks Smothered Fire

By V. Ross Nicodemus

IT WAS at 7 A. M., August 5, 1894, and Father was driving the cows to the field. I was standing in front of the barn near the watering trough. I smelled something burning, and was looking around in wonderment when Father called, "The straw stack is on fire!"

I ran to the east side of the stack where the fire seemed to be starting, then back to the watering trough, got a bucket of water and threw it on the flames. But it was useless.

A crew of threshers about half a mile away saw the fire, and the engineer tied down the whistle string. The men came running, and soon the first helpers were on the scene. The blowing of the whistle attracted some carpenters who were working on a large barn two miles away. They saw what the trouble was, and spread the alarm in every direction by telephone.

In a short time people from the country around were hurrying to the fire. Soon more than two hundred men, women, and children were on the scene.

There was a field of green corn standing near-by. Why not cut some of this corn and stand it around the burning stack, also throw it on the flames and smother them? It seemed to be worth trying. Corn choppers were quickly brought out, pocket knives were used, stalks were pulled out by the roots, any way just so it could be gathered, and willing hands carried it and threw it on the burning stack. It did the work. More than an acre of this corn was cut and thrown on the flames. Some was carried up on the barn roof and then thrown out on top of the stack, until the flames were subdued and finally conquered.

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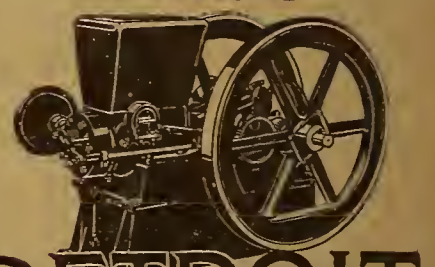

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Crops and Soils

The Clover of the South

By Perry Ham

"DESPISE not the day of small things."

We see in the farm papers pictures of alfalfa six or seven feet high and read about bumper yields of kafir corn, Sudan grass, and other fodders. No wonder we overlook the small grasses.

My talk along fodder crop lines is intended for the owner of a poor farm and for the man with a few poor acres on a farm that is generally fertile. I want to talk of Japan clover.

Twenty-one years ago I bought the farm I still own. It had been through the rent mill and was badly run down. There was no grass for pasture, and I failed to get any to grow, although I sowed seed every year and took all pains to help it to thrive. Invariably the grass would die and leave the ground nude and baked or packed.

Ten years ago I first saw a patch of Japan clover growing by the roadside. I examined this closely and found it to be a legume with nodules on the roots. I soon found out that all stock ate it greedily, and that it grew thickly on the ground.

After thus becoming acquainted with this fodder crop I wanted it on my farm. I found the plants died down when freezing weather came, and although this was a rather shocking surprise I saw there was lots of seed for another crop scattered on the ground. To make the most of this seed I scraped the ground and gathered up about two gallons of seed and trash. This I scattered over about 50 acres of my poorest land. That was all that I ever did to get Japan clover to grow on my farm.

To-day I have more pasture than I can use. My land is covered with as fine, soft, sweet, tender clover as any rich farm can show.

I have Japan clover now growing luxuriously on barren places and knolls on stony ground that was too rough for tillage; also in gulleys and deep ravines, among the crawfish "chimneys," where it is too wet for cultivation, and on the good spots as well. It also grows on land that is sour just the same as where the land is sweet.

What Lespedeza Will Do

I do not know the constituent elements of Japan clover, but I do know its feeding value to be high.

I want my readers to remember this:

Japan clover makes good grazing for all kinds of stock.

It grows in a thick mass, and keeps growing all summer until freezing weather comes.

It will sod, or rather mat, over any path, road, or naked spot on your farm, and grows from three to fifteen inches high.

It kills out weeds and, above all, enriches the land.

I do not know how far north it will grow, but it is a godsend here in Fleming County, Kentucky, among the foothills of the Cumberland Mountains.

The clover has spread over a pretty large territory hereabouts, and is still spreading. Some farmers fought and even cursed this little clover at first, thinking it was some bad pest, and we can scarcely blame them, for this is the first plant to make its appearance as if spontaneous that to my knowledge has proved to be a blessing.

EDITOR'S NOTE: Our Kentucky subscriber is by no means the only one who has fallen in love with Japan clover (Lespedeza). His eulogy of it is not overdone, either, where climatic conditions favor the growing of this legume.

Japan clover is to the south and middle latitudes what sweet clover is to the north, so far as the ability to grow on impoverished soil is concerned.

Sweet clover has the advantage as a soil improver, however, in that it will withstand the climatic conditions of the South better than the Japan clover can endure the late and early frosts of the North.

Japan clover was accidentally introduced into this country something over sixty years ago, and has become more or less spread throughout the Southern States and northward as far as portions of Kansas and Pennsylvania.

In the more northern sections its value is greatest for pasture, but in the more fertile southern sections it makes a tremendous growth and yields almost unbelievable crops of hay.

Like sweet clover, Lespedeza will thrive in soil that is so impoverished and unfit as to prevent the growth of the better-known legumes.

Its feeding value ranks slightly above our well-known red clover. In protein content, Japan clover is only one and one-half per cent below alfalfa, but it contains over two per cent more of fat-forming nutrients.

Japan clover is in no wise a menace as a plant pest. Although it self-seeds the ground each year before being killed with frost, there is no difficulty in freeing the soil of the plant by cultivation.

In many localities no soil inoculation is required before seeding, since there are several species of this plant found native in many portions of America. But the safest plan is to inoculate with commercial cultures or with soil from where Japan clover has been growing for several years.

Excellent results are now being secured by seeding Japan clover for hay with redtop, winter oats, and Bermuda grass.

Equally as important as soil improvement during the summer season is a successful winter-growing legume to cover and protect the soil during the balance of the year.

This gospel is true for the North as well as for the South.

Filling Dead Furrows

ONE of the best ways to fill in the dead furrows is with a disk harrow. Drive so that the center of the outside disk comes at the middle of the ridge on the side of the dead furrow. Drive down and back on the same ridge, and then go on the other side of the furrow the same way. This will leave the land almost level, and you can plant the standard crops where the dead furrow was, without fear of their being washed out or covered up by cultivation.

Waste Tons of Potash

FERTILIZER sharps have demonstrated that more than 100 tons of potash goes to waste every day in the twenty-five or more distilleries that subject molasses to the process of fermentation. This potash, thus wasted daily, is worth at present prices about $30,000. There seems to be no good reason why this potash cannot be saved as a new source of plant food.

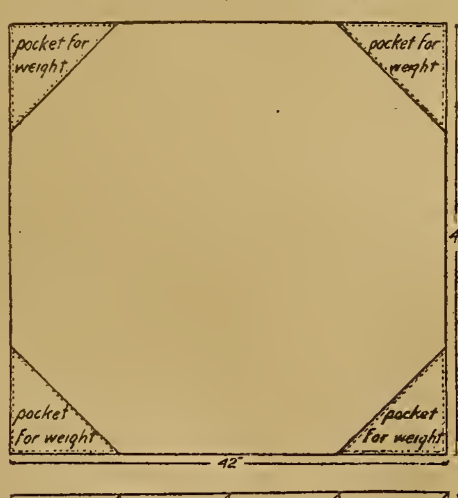
Mixes Salt with New Hay

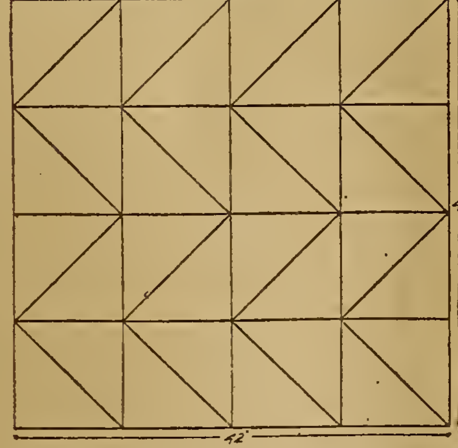
TO KEEP hay from taking fire in the barn by spontaneous combustion an Iowa man recommends four quarts of salt to the load when it is put in the mow.

Make Hay Caps Soon

L. J. WRIGHT of the Wisconsin Agricultural College has discovered an ingenious way to make haycock covers so the weights will not get tangled up. Here are the directions:

Take 10-ounce ducking and cut it into squares 42 inches on a side. Now take one of the squares and cut it into 32 pieces, as shown in the second picture. Then sew the triangles on the corners of the large squares, using No. 24 thread, on a sewing machine. But before sewing the long side of the triangle put in





stones (one or more) weighing about a pound at each corner. Then sew up the long sides with the stones in the pockets. These caps can be made at a total cost of about 22 cents each for material, and after a two-years trial have been pronounced extremely practical.

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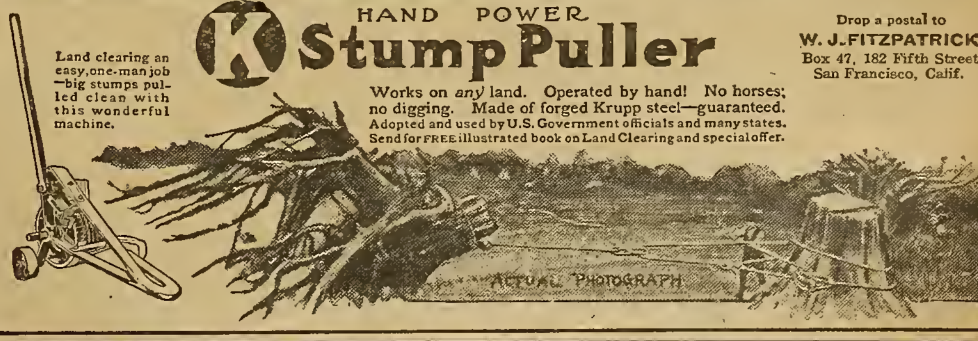

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give the Quickest, Biggest and Surest Profits of Anything You Can Grow

The work is so easy and simple that even beginners make big profits from the start. Our *free book* tells how.

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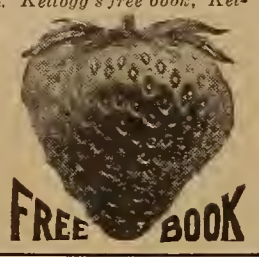

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Spencers, Unwins and Grandiflora varieties mixed. Most beautiful colors and largest flowering. Cannot be compared to any other mixture offered. To introduce our high quality pure seeds and our 1916 four-color Pure Seed Book and Planting Guide, we will send 500 of the above sweet peas, enough to plant a row 42 feet long, for ten cents. Get this 1915 Book Sure!

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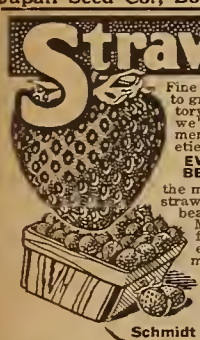
Rose Bushes with roses on them in 8 weeks from the time the seed was planted. It may not seem possible but we **Guarantee** it to be so. They will **BLOOM EVERY TEN WEEKS,** Winter or Summer, and when 3 years old will have 5 or 6 hundred roses on each bush. **Will grow** in the house in the winter as well as in the ground in summer. **Roses All the Year Around.** Package of seed with our guarantee by mail, **only Ten Cents.**

Japan Seed Co., Box 206, South Norwalk, Conn.

Strawberries



Fine plants, full of life and sure to grow. As a special introductory offer to gain new friends we'll aend yon a good assortment of standard popular varieties including two of the

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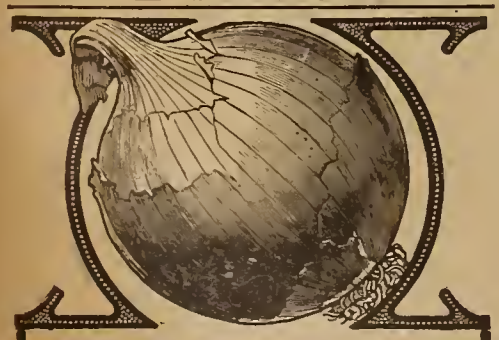

Maule's Commercial Yellow Globe Onion

Has yielded 600 bushels and more an acre; its size gives it great market value, its yield makes it profitable. See full description and prices on page 69 of

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176 pages about Maule's Vegetable, Farm and Flower Seeds, Bulbs, Plants. The best catalogue we have ever issued: we want every planter to have a copy. A postal card is as good as a letter—write for it today. We send this catalogue **Free**

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2129 Arch St., Philadelphia, Pa.

Garden—Orchard

Making Tomatoes Pay

By Esther Reeks

NINETY DOLLARS from 200 tomato plants is the record our books show for last year. This is not a bad yield anywhere; but in this country, where tomatoes rarely do well, it seems especially good.

The secret of success, we believe, lies in having the right sort of plants to start with. Those raised in the ordinary way in greenhouses seldom do well here, as they take too long to adjust themselves to the new conditions when transplanted to the garden.

We plant seeds in boxes the latter part of February or early in March. The boxes used are about four inches deep, aud the soil is light and rich. The seeds are put in check rows three fourths of an inch apart, and the surface is covered with a wet cloth uutil the first leaves appear. The cloth is then removed and the box set in a warm, sunny place. Wheu the plants begin to crowd each other, every alternate one is removed to another box. About the first of May they are transplanted to cold-frames, and gradually hardened before putting in the open gardeu, which is done the latter part of the same month. At this time they are about six inches tall, with stems a quarter of an inch thick and almost as much root as top.

The ground used for tomatoes is well fertilized, and plowed deep in the fall. The plants are set from two and one-half to three feet from each other in rows three and one-half to four feet apart. Frequent cultivation is given them until they begin bearing. We fiud that trellising does not pay for the work, but we always keep the plants well hilled up. The same ground is never used for tomatoes two years in succession, and all vines are burned as soon as the last of the fruit is gathered.

In our Colorado climate we find that the Early June and the Livingston are the two best varieties to raise. The latter is rather the finer tomato, and brings a little higher price; but the other ripens two weeks earlier, produces more heavily, and is out of the way before frost comes. The Early June does not need pruning; but the Livingston should be cut back as soon as a fair amount of fruit has set, otherwise the plants will continue to grow and set instead of maturing what is already formed.

The price paid for tomatoes in many markets depends somewhat on the way in which they are prepared. To look their best they should be carefully graded, and packed in crates holdiug only two layers. The largest and smoothest will in this way bring a fancy price, while the second grade, being uniform in size, will sell for as much as the ungraded product. The culls may be sold as such for ketchup.

To sum up, the two rules for making money from tomatoes are: first, get them early by using the right sort of plants; and, second. put them on the market in an attractive form.

Results from Spraying

SPRAYING one half of a sixteen-year-old apple tree four times, and leaving the other half unsprayed, in an Indiana orchard, resulted in a yield of twelve bushels of good marketable apples from the sprayed half of the tree, and six bushels of unsound, unmarketable apples from the unsprayed half of the tree.

Peach Trees Underground

By B. F. W. Thorpe

HAVE you buried your peach trees? This is becoming a common question in some parts of the Rocky Mountain States, and the practice is spreading.

A few years ago the experiment of laying down peach trees in trenches and covering them with straw, and over that a thin layer of earth, was tried out in some of the Rocky Mountain States. The plan worked so well in localities where fruit buds winter-kill that now scores of farmers are laying dowu a few peach trees for a home supply, and some bury from several hundred up to a thousand or more trees every fall.

For complete success the young tree, when plauted, should have its roots pruned short on two opposite sides and each fall thereafter be laid down in the same direction after the soil about the trees has been thoroughly soaked with water.

The pruning of the top should be done so as to make the covering as easy as possible. After laying down, the branches are carefully bent into place in the trench, and straw or waste hay is worked among the branches and over them and the trunk, and before the ground freezes a thin layer of earth is placed over the buried trees.

When the warm days of spring come, the earth is first removed and the air gradually allowed to enter the straw covering. The trees are not entirely uncovered and placed in an upright position until all danger from frost is past. The buds will develop and begin to unfold while under the straw.

Peach trees handled in this way bear as heavy a crop of fruit in proportion to the size of the tops as those not laid down, but of course have to be propped to hold them in an upright position.

Any of the more northern States can raise enough peaches for home use by this means, and can also raise the more delicate kinds of apples, apricots, and small fruits without any great amount of additional labor.

The Biggest Tree

THE largest trees in the United States are such cone-bearing trees as the big trees of California and the cedars and spruces of the other Pacific Coast States. The largest tree in the United States, aside from these, is supposed to be a sycamore at Worthington, Indiana, which is 42 feet 3 inches in circumference and 140 feet high.

Old Apple Trees

THE tree in the picture is over sixty years old, and has been bearing regularly as far back as the owner can remember. The trunk is gnarled, but the head is kept well pruned. This picture, taken in July, shows the healthy condition of the top and suggests the wisdom of pruning aud caring for old trees.

A Market for Apples

By Henry Wolfe

TWO days after our 1915 crop of apples was packed, every box and barrel on the place was sold. We added a number three grade to our hand-picked fruit, and made two grades of windfalls because of the insistent demand for them. Not an apple went to a commission house, and scarcely a box was shipped out of the immediate neighborhood.

Local conditions created the demand, but our policy of pursuing the local market and puttiug up an honest pack brought buyers to us. By letter, by telephone, and by personal visit the orders came in. While our canvasser made his regular tour to old customers, new ones came from every direction.

For three years we had persistently cultivated the local market, although our chief interest had been in the consumer market for our boxed fruit, and wholesale connections for our barrels. Yet the dealers and householders within reach of our team had seemed a logical outlet for our fruit, and we had followed it as the line of least resistance, even while developing our special interests. The biggest stumbling block was the distrust which years of unreliable packing had inculcated in the minds of purchasers, and the certainty which they felt that all the good apples were on top of the barrel.

The 1915 season was abnormal in New England. Our crop was only one fourth of what it should have been, but our neighbors were worse off than we, and for miles around there was scarcely an apple on the trees. The late spring freezes, the midsummer hailstorms, and the September gale had combined to devastate the orchards. But apples were quickly shipped into the local vacuum by the carload, and it was only the man with an established market who profited.

On March 1, 1915, I had found myself with 50 barrels and as many boxes of the 1914 crop on hand. In Boston the fruit was a drug in the market, for many growers and jobbers had carried them

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A Great, Big, 4-Color Book—*just off the press*—filled with reproductions of leading Fruits, Berries, Roses, Ornamentals. Printed in Nature's own beautiful colors. Packed with facts that will enable you to grow more—finer fruit and get higher market prices.

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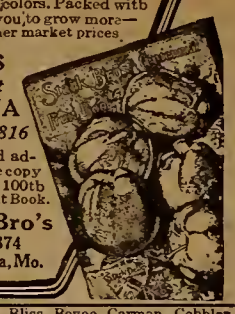

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$1.50 per 1000, etc. Best Michigan Stock. 100 varieties including Everbearers, also Grapes, Raspberries and other small fruits. Send today for FREE Catalog.

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of a large Nursery. You can make good money taking orders for trees and plants right now while thousands of people in all sections are placing their orders for spring planting. We offer 2,000 varieties and pay you weekly for your work. No delivering. Glen Bros., Est. 1866, 1789 Main St., Rochester, N. Y.

PEACH & APPLE TREES 2c & up

Pear, Plum, Cherry, Small Fruits, Strawberry Vines, Nuts, etc. GENUINE HALE BUDDED from Bearing J. H. HALE TREES. GENUINE Delicious APPLES. CATALOG FREE.

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SWEET CLOVER

White Blossoms; the greatest money-making crop of today. Wonderful opportunities for the farmer who starts growing it Builds up worn land rapidly and produces heavy, money-making crops while doing it. Excellent pasture and hay; inoculates your land for alfalfa. Easy to start; grows on all soils. Our seed all best scarified hulled, high-germinating and tested. Quality guaranteed. Write today for our big, Profit-Sharing Seed Guide, circular and free samples. AMERICAN MUTUAL SEED CO., Dept. 942, 43d and Rohy St., Chicago, Illinois.

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SHEERIN'S FRESH DUG FRUIT TREES

Buy At One-Half Agent's Prices

Let me send you my catalogue—it's free to everyhody—it's different. It tells you facts about my fresh dug trees and how you can save money and receive a guaranteed SQUARE DEAL. Write today and see the difference in buying direct from grower than through agents.

Apple, 4½-6 ft., $14.00 per 100. Peach, 3½-4½ ft., $9.00 per 100.

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CLOVER AND TIMOTHY $5.75 Per Bu.

DECIDED BARGAIN—INVESTIGATE and Save Money

Red Clover and Timothy mixed—the standard grasses, cannot he surpassed for hay or pasture. Contains 1-3 clover, just right to sow. Thoroughly cleaned and sold on approval, subject to government test. Ask for this mixed seed if you want our greatest bargain. Have Pure Clover, Sweet Clover, Timothy and all Field and Grass Seeds. Write today for free samples and 100-p. catalog.

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Millions of Fruit Trees

We have over 2,500 acres planted to nursery stock. Our several large successful orchards were planted to trees from our own nurseries. Hence, we know what our trees will do. We now have millions of apple, peach, pear and cherry trees. Also thousands of other fruit trees, plants, evergreens, ornamentals, etc.

Harrison's Trees Grow

All stock grown under personal snpervision of Orlando and Geo. A. Harrison who have devoted tbeir lives to fruit tree growing. We sell only the trees we grow. All stock guaranteed. Prices low, quality considered. Send today for free Fruit Guide full of valuable information.

Harrisons' Nurseries
Box 44 - Berlin, Md.

over in cold storage from the low-price era of the fall before, and were trying to unload. So I determined to use this fruit to still further extend my local market instead of attempting to compete in the big cities.

I made the round of the towns nearest at hand, and sought out the firms which had not handled my apples. I offered to send a couple of barrels free of transportation to each firm. After they had sold the apples they were to pay me what the fruit was worth to them. I said, "This is a get-acquainted offer. After you have once handled my apples you will want them again."

Not a firm refused the offer, and not one sent a check for less amount than I would have asked them if I had set a price. The apples were sold, and I had laid the foundation for a bigger market for the future. The local dealers began to trust the management of our orchard.

This was demonstrated when I went to them this fall and said: "That big wind blew off many of my apples. We have carefully sorted them into two grades of drops. The A grade should keep fairly well, for they are sound apples. The B grade are good for immediate use but they will not keep. Have you any use for either of these grades? Besides these we have our regular grades of hand-picked apples."

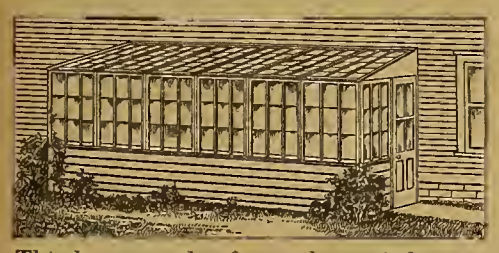
Firm after firm took us at our word and gave orders for assortments of grades, never questioning our prices, which were based on the Boston market. On the second day of my canvassing tour I reached a firm which had handled both our boxes and our barrels last year. "How many apples have you left?" was the first queston. "We'll take them all. We had good luck with you last year and we'll trust it this year." Our last hundred barrels were sold.

The selling of this year's crop began three years ago when we pruned the trees until the light and air could reach all the way around every apple on every tree, when we covered every leaf and every square inch of big limb and tiny branch with spray.

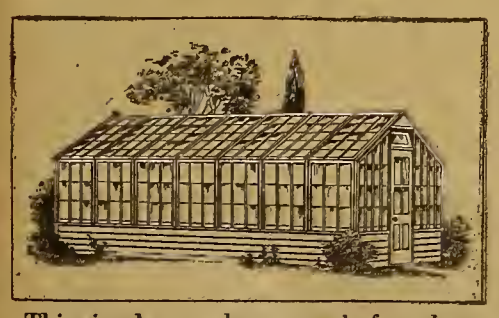
We began to dispose of our 1915 apples in 1912 when we began to instill higher ideals in the minds of our packing-house force, when we enforced honesty in the packing and persistently followed it up until our brand stood for something and meant the same quality throughout the barrel and fair play between producer and consumer—good fruit at fair prices.

Hotbed-Sash Greenhouse

BY MEANS of a form of construction perfected by an Iowa concern, greenhouses can be made from hotbed sash. These greenhouses may be built by ordinary labor, and as the sash is already glazed the time of construction may be as short as one day. Prices range from about $29 for a 6x18-foot lean-to green-



This lean-to style of greenhouse is heated from the main building



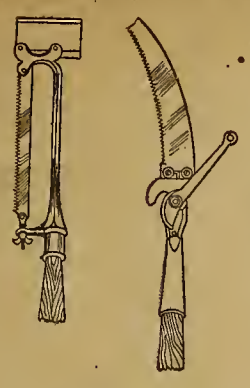
This simple greenhouse, made from hotbed sash, can be erected quickly by unskilled labor

house to $112 for a 10x22-foot entirely separate building with a gable roof.

The prices include doors, hardware, nails, and paint. Such greenhouses may be purchased complete, or you can order simply the framework. Most of the sash used in these greenhouses are 3x6 and 3x4 feet in dimensions, and as the houses are made in sections, there is no limit to the size. They may be heated with stoves or, in the case of the lean-to greenhouse, may be connected with the regular heating system of the house.

MANY topics are discussed on this page. Perhaps we have not talked about all the things you wauted to know about. If so, write to The Editor, FARM AND FIRESIDE, Springfield, Ohio. Your letter will be carefully read and answered. These pages are for your use. They are planned that way. Use them and use the editor to help make your business more profitable.

Saw and Shears Together



FOR the fruit grower who dislikes to climb into his trees the device illustrated will be of interest. It is a combination orchard saw aud pruning hook. The saw, which may be had either in straight or curved styles, is detachable so as not to be iu the way in a brushy tree. Another interesting combination is a saw and chopping knife which can be used from the ground. The hook and saw combination costs about $1.50, and the knife aud saw about $1.

New Crops on Trial

SOMEBODY of course must try the new crops, but usually the expert seedsmen or the experiment stations are really in the best position to make accurate tests.

Among the field and garden crops which are still in the experimental state, and which are risky propositions on a large scale, are these:

Wonderberry, which appears to have no advantage over the ordinary huckleberry.

Strawberry-raspberry, which bears fruit resembling large strawberries on bushes 18 inches high, but the fruit is rather poor quality, though all right for preserves.

Himalaya berry, similar to blackberry but not so hardy and smaller-fruited.

Billion-Dollar grass, similar to common millet, which yields heavily on rich soil but the quality is doubtful.

Jerusalem Artichoke, raised for roots, but they are said to be of poor quality as well as small in size, though good for hogs.

300-Bushel corn, the name of which is misleading by about 300 per cent.

200-Bushel oats, which is likewise misleading by at least 400 per cent.

In a similar way 35-day potatoes and 47-day tomatoes are in the doubtful list. The seedless apple and the seedless watermelon are also still on trial.

Among the newer crops which are endorsed by honest and responsible growers as having real merit are:

Everbearing strawberries, which fruit in the summer and fall, even of the same year planted.

The Mountain Danvers onion that is said to mature well at altitudes as high as 7,500 feet, and is extra early in other places.

The Icicle radish, which by its sweetness and tenderness is overcoming a popular prejudice against white radishes.

Feterita, the new grain sorghum similar to kafir and milo, but which stands drought very well, and is soft enough to feed without grinding.

Shallu, or Egyptian wheat, which is grown for fodder and yields well with heads somewhat resembling broom corn.

Sudan grass, an excellent fodder crop, easy to start, early maturing, and does well in the Central and Southern States.

Pruning Hastens Maturity

By T. Z. Richey

THE yield and quality of many vegetables can be increased by pruning and pinching off center buds, thus throwing the energy of the plants to the formation and ripening of fruit.

With muskmelons and cantaloupes I always pinch off the center bud of the main vine when it reaches a length of four or five feet. Cucumbers are treated in a like manner. Such treatment results in increased size of the fruit and a hastening of maturity. For the same reason the ends of pole and Lima bean vines are pinched off when they reach a height of six feet.

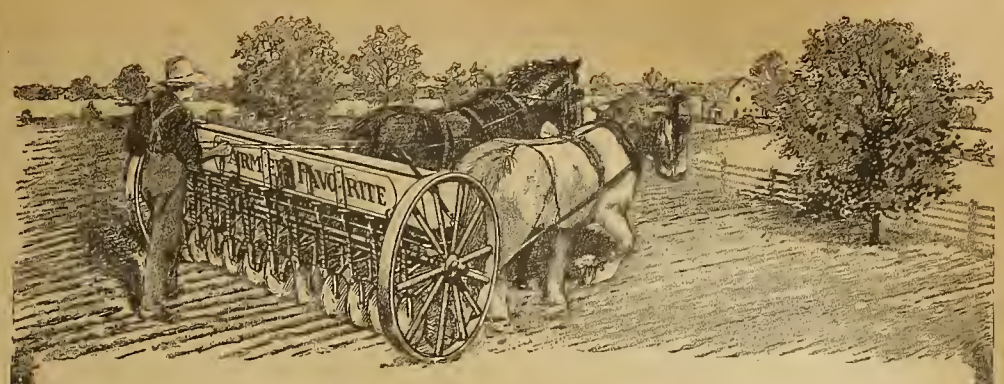
Tomato vines expected to yield an early crop are pruned severely. But three stalks are allowed to develop, all side shoots being pinched off as soon as they begin to form. The three stalks are firmly supported by a stake four feet in height.

When the vines reach the top of the stake the center bud is pinched out. This stops height growth and throws all the energy of the vine to the developing and ripening of fruit already set. By following this method I have obtained as high as forty fine, perfect tomatoes from a single plant.

Flutter Scares Rabbits

I HAVE found that small pieces of white rags will protect my garden truck from rabbits.

Tie the pieces of white rag to the end of sticks, then put the sticks about every 15 feet apart in the garden. To protect young fruit trees tie the white rag about six inches from the ground around each tree. The wind blowing these rags will scare the rabbits away. I have tried this method with success for several years.



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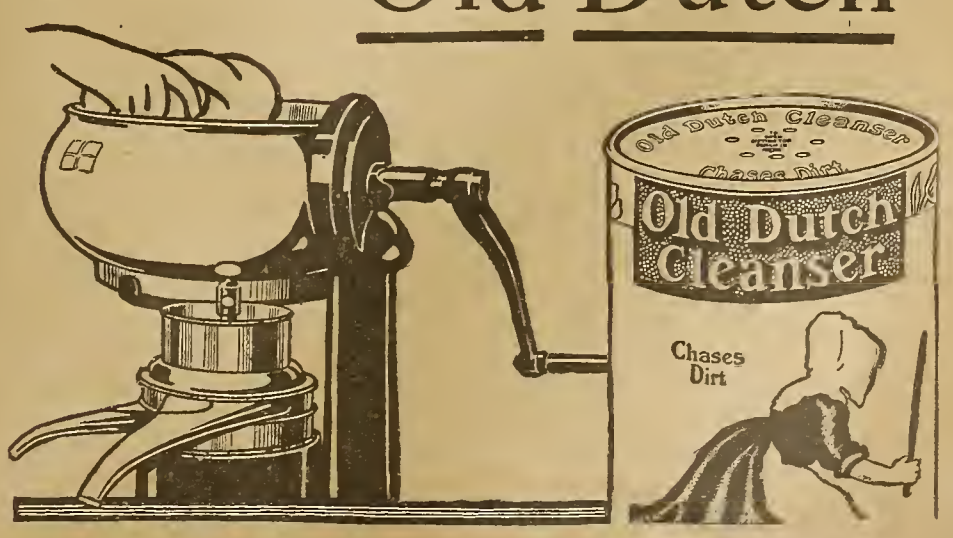

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DEAR SIRS:—As I am so well pleased with the ten Incubators and twenty Brooders ordered of you last April, I have decided to increase my plant. Enclosed you will find draft for which please send me twenty more Cycle Hatchers. Please rush.
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The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from $50 to $125 per acre. Easy to start, grows everywhere, on all soils. Don't delay writing for our Big 100-page free catalog and circular giving full particulars. We can save you money on best tested, guaranteed, scarified seed. Sample Free. Write today.
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A Schwalge Incubator never wears out. It hatches the bigbest possible percentage of fertile eggs year after year under all conditions. It is absolutely self-regulating. Has original Moisture and Ventilating Systems supplying fresh, warm, damp air to the egg chamber. Double wafer thermostat keeps temperature uniform.

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Get our big new 1916 Combination Offers on *Progressive Incubators* and *Brooders.* Wonderful bargains—built from best materials with latest improvements. Only machine with *hundreds of dead air cells* to protect eggs against sudden changes.

TAKES GUESSWORK OUT OF HATCHING
Many users report a chick from every hatchable egg. Easy to run. Built of genuine California Redwood; Copper Hot Water Heater; Double-disc Regulator; Double Doors; Safety Lamp; Tester, etc.

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No extras. Incubator and Brooder both $9.85. Freight paid east of Rockies. Money back with 8% interest if machine doesn't make good. Order from this ad or get Special 1916 Combination Offer and Free Poultry Book showing why the Progressives beat them all for results.
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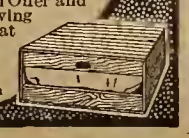
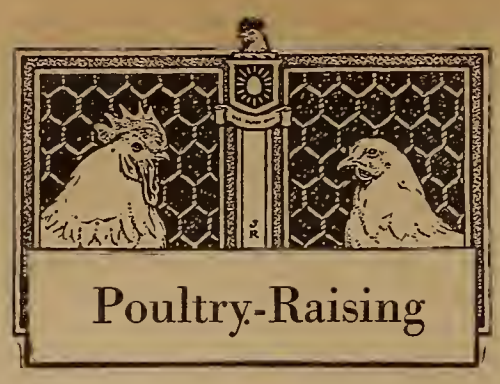




Poultry-Raising

Sermons in Hens

How I Helped in the Church

By Mrs. D. R. Merry

I MARRIED a minister seven years ago. The promised annual salary of my husband, small enough at the best, often fell from $50 to $100 short. This was caused by members suffering losses and failing to pay the money they had pledged, persons moving away, and members withdrawing from the church.

Feeling it to be my duty, I smiled through this, and the many other disappointments thrown in our path. I did not feel a bit cheerful about our present condition, and the future worried me.

In the seven years of married life we had moved five times. I was sick of dressing my children in contributed clothing, wheeling my babies in borrowed baby carriages, wearing clothes the Ladies' Aid Society gave me, and the many other humiliating things we endured.

I said nothing of all my worries to my husband, as I felt that it would only grieve him, and he was doing all any minister could do in a new country where money was scarce and living was high. All the time I kept my eyes open and my mind busy trying to find some way to better our condition and not interfere with the dignity of my husband's calling.

Looked for Get-Rich-Quick Methods

Our fifth move took us to a growing, fair-sized town, and not having a parsonage the members of our church had selected a home for us in the outskirts of the town. The house was small, but large enough for our family and furniture. There was a large barn, a chicken house, and several acres of land.

That winter I read every pin-money and get-rich method I could find, but none seemed appropriate, or, if they did, required capital, and I didn't have capital.

I still was looking for a plan to make money, when one day my uncle, from the West, came for a visit. Upon leaving he presented me with $25.

I felt very rich, and could find one thousand and one places where I could use the money. It did not take me long to decide to invest the money in chickens and equipment. My husband sanctioned this move and promised me that every cent of the proceeds should be mine.

I had been raised on a farm and, like every other country girl, had helped care for the fowls, so that I felt quite experienced along this line of work. I bought twenty mongrel hens from a farmer, paying 50 cents apiece for them, a pure-bred White Wyandotte rooster for $1, an incubator and brooder, and some feed. And all of my money had been invested.

The hens began laying within a day or two, and by the 20th of March I had enough eggs to set the incubator. I kept the incubator in the cellar.

From the first setting I hatched 96 chicks. I did not have enough eggs to reset the incubator, so I sold four of the hens and bought eggs enough to fill the machine. This time I got 108 little downy chicks. The neighbors were very liberal with scraps from their tables, so the feed of the chicks did not cost very much.

Incubator was Used Again

I could find no way to get eggs for a third setting, as the hens had laid their first litters and were resting. I was just about to move the incubator into the garret when a friend wished she could have "my luck," and I immediately offered to do the work for half. From this speculation we each got 61 chicks.

The land was plowed and the portion next the buildings was planted in corn, and after it had been cultivated several times we sowed a mixture consisting of feterita, oats, wheat, and soy beans between the rows. This gave the hens a shady resting place and later furnished food until frost in the fall. Another thing it furnished was a place for many of the hens to conceal their nests and later bring forth thrifty broods of chicks.

From the first hatch I sold 50 early broilers at 50 cents apiece; a few weeks later 50 more at 40 cents. I kept 100 young pullets, and the rest we ate. These with the eggs reduced our living expenses, and as my husband still continued to give me the same allowance for the home we enjoyed several heretofore unknown comforts. My children were dressed as well as their playmates, and I felt at liberty to choose my own winter hat.

I made a study of feeding for eggs, and followed the advice of the experienced to the letter. I gave the hens hot food in the morning, carried them a hot drink at noon, and a pan of hot corn at sunset. This may seem like a lot of trouble, but we reaped a bountiful harvest of eggs. During the month of December, when egg prices were soaring around 50 cents, we were selling from four to five dozen a day.

When I went shopping I bought what I pleased, whether it was a late magazine, a pretty dish, or a toy for the kiddies.

At the end of the first year my husband's salary was in arrears, as usual, but we were asked to remain. Feeling that a move only meant a big expense we decided to remain.

In the spring we bought another incubator, and that year hatched 1,000 chickens. In the fall we remodeled the barn and kept 200 laying hens.

We were now in a position to dress well, also to meet our obligations when due, and considered our affairs our own. The members of the church were not called on to solve any of our financial problems.

On Sunday my husband was able to stand in the pulpit, his mind free from petty cares, look every man in the eye, and put a new-found spirit in his sermons.

Crude it may sound, but prosperity is the first letter of success in the pulpit as well as any other vocation.

This vim and independence brought in many outsiders. Maybe it was curiosity, but they kept coming until the congregation outgrew the building.

At the end of the second year the salary was not only all paid, but the arrears made up, and we were asked to sign a two-year contract at a liberal increase.

This prosperity did not cause us to abandon the hens, as we considered them the foundation of our uplift, and we kept on with 200 layers and planned for 1,000 chickens every year.

I do not feel that the extra work has caused me to neglect any of my duties in connection with the church: in fact, I believe I have done more in the last two years than all the other years.

How to Candle Eggs

By Harriet MacMurphy

AN EGG when it is first laid contains 65 per cent of water. As the shell of the egg is porous, this water immediately begins to evaporate. Air replaces the water, forms chemical combinations with many substances in the egg, and with bacteria causes putrefaction. This happens only when the egg is not devoted within a short time to its primary purpose—namely, hatching. Whether an egg is fertile or not, the temperature at which it is kept determines how long it will remain fresh. Unfertile eggs keep fresh longer than fertile eggs.

The shell of a fresh egg looks dull; a bad egg is shiny generally. A fresh egg feels heavy, and when shaken does not produce a sound. When a bad egg is shaken it will rattle.

If a fresh egg is dropped into cold water it will sink and lie on its side. A stale egg will rise in just the degree that air has taken the place of water in the egg. And it may rise to the surface of the water.

Candling—placing an egg in front of a strong light with the rest of the room in darkness or semi-darkness—is the best way to test an egg for freshness. By this method the interior of the egg can be inspected easily and plainly.

Here is how a candling apparatus is made, and how it is used:

Cut a hole, a little smaller than an average-sized egg but about the same shape, in the side of a box large enough to hold a burning lamp or electric-light bulb. Then cut another in the top of the box to let the heat of the lamp escape. Place the box containing the lighted lamp in a darkened room, sit in front of it with eggs on one side and a receptacle for them at the other. Take an egg in each hand; hold one, large end up, against the hole before the light. If fresh, the white will show clear and the yolk will float in the center of it, slightly darker. A very slight oval space will be visible at the end—the air space. The larger this air space the older the egg. If the egg has been set upon by a hen for any length of time, or kept in a heated condition, a small bloody ring may be seen on one side. This is called a blood ring, and means that growth has started.

If the eggs have been kept some time in one position, the yolk may have dropped and adhered to the shell. If moist dirt has touched any part of the outside of the shell, germs may penetrate and grow on the white, producing "spot rot." This may continue to spread rapidly and become "black rot." The blood ring may grow to a clearly defined structure of a chicken before it gets dark enough to be invisible.

Eggs to be shipped any distance are usually candled. Small eggs, eggs with slight blood rings, and dirty eggs are classed and sold as "seconds." "Cracks" are boxed by themselves, if not sufficiently broken to be "leakers," and sold to bakeries and restaurants. Leakers are broken into cans, beaten sufficiently to mix, and then frozen, kept in that condition sometimes for months and sold to bakeries and restaurants. They may be in good condition, but spoil rapidly after their removal from the freezing temperature to a warmer one.

Let Her Sit a While

A LOT of work, worry, and loss of good eggs result every year from trying to induce hens to undertake the hatching job before they have arrived at the complete broody stage. To make the risk of loss a small one, every candidate for brooding eggs should sit without signs of giving up her job for four or five days. Then the hatching eggs will generally be safe in her care.

Rainy-Day Hints

ALMOST before we know it, haying and harvest will be upon us again. Will it find us all ready?

How about the old mower? Don't you remember that it rattled and had a tendency to choke down the last day we used it?

Did it need new guards, or new sections in the sickle, or was it suffering from general debility?

Or will the grindstone repair its ills?

Overhaul it and see. If we hitch up to it when the haying is crowding we may find that if we had looked in time we could have got new parts and made it a perfectly good machine for this year.

Neglecting it may force the buying of a new machine or the losing of hay.

And the rake? Do you remember that tooth which broke out so late in the season that you borrowed a rake from a neighbor to finish with? Can it be fixed up? Certainly, if it is taken in time.

The binder certainly needs overhauling. No man should expect a binder to go into the field without some preliminary attention. It may be in condition, and it may not. A few hours of this sort will prevent a feeling of uneasiness as the harvest comes on, and you suddenly think after you have gone to bed that the grain is ripe and you really don't know whether the machinery is in absolutely sound health or not.

You will find that some of these machines are better replaced by new ones, perhaps. Study the matter and get the best. Write to the manufacturers, get their catalogues, and ask them questions.

Care for the Turkeys

By Bettie H. McDonald

MY EXPERIENCE has convinced me that the breed of turkeys kept counts for less than the care given the birds, both young and old.

The turkey is a stupid bird, and the caretaker must think and act for his charges from the shell to marketing age.

When raised in yards the pens and runs must be kept clean and dry. Wet,

White Hollands, attractive about the farm too

undrained spots breed trouble. As a rule, a wet, bedraggled poult is no better than a dead one.

One of my hatches of 11 fine poults all died as the result of one wetting in a heavy dew. The turkey hen stole her nest and led her little ones through the wet grass, and no effort could save them.

Even half-grown turkeys before the period when they "shoot the red" are weaklings and must have constant attention. No one should attempt to raise turkeys unless he is willing and able to devote his undivided attention to the job.

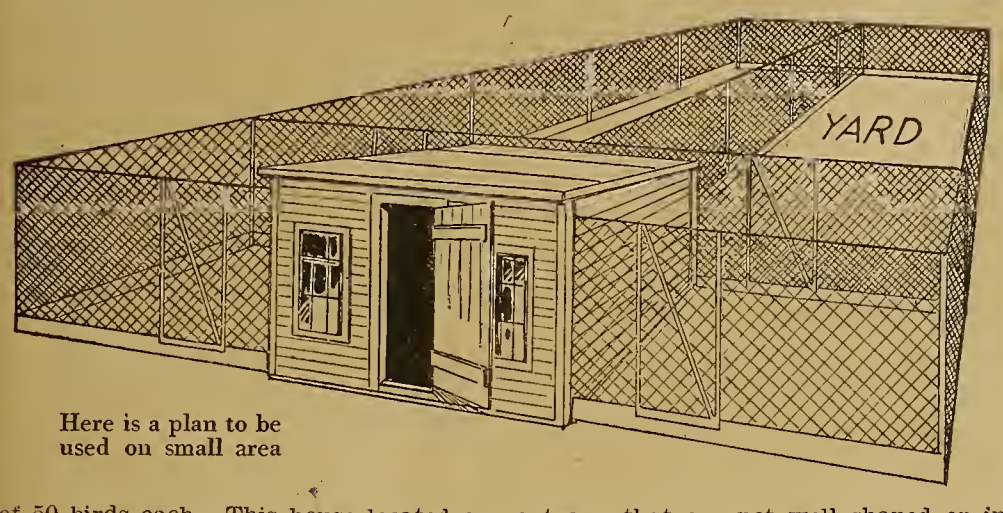
I find the White Holland breed thrives better when yarded than the breeds having more nervous and roving temperaments. The White Hollands, being smaller, are better adapted to the average family table than the larger breeds.

My turkeys, of this breed, weighing from 7 to 16 pounds, sold last year for 22 cents a pound. One of the best sources of profit is selling eggs for hatching. Let the other fellow take the chances of raising the poults.

Intensive Poultry Outfit

THIS poultry house with four adjacent yards is well adapted to intensive poultry operations when only a small area can be used for this purpose.

A house 20x20 feet, divided through the center, will accommodate two flocks



Here is a plan to be used on small area

of 50 birds each. This house located on a plot of land 75x200 feet, kept cultivated or stirred frequently, will continue in a sanitary condition with this size of flock.

If preferred, one or more of the yards can be employed for growing garden crops or succulent feed for the fowls, and rotate the yards once or twice each season.

The materials for this house and fencing need not exceed $60 to $75.

PLYMOUTH ROCKS, Rhode Island Reds, and Brahmas make the best capons.

IF YOU can't trust your wife to draw checks against the bank account as she needs the money, there's something wrong with you.

THE ostrich as a buggy horse is becoming a legal problem in California. They exceed the speed limits, and are charged with a rapidity of 40 miles an hour to the damage of people knocked over by them. They kick, and reach over from the road into orchards and swipe fruit. An ordinance against ostrich-driving is proposed in at least one California town.

Turkeys Averaged $8

By L. E. Armour

RAISING turkeys on many farms can become more than a pocket-money prospect. The objection to raising turkeys in most thickly settled localities is the risk of turkeys ranging over neighboring farms and thus becoming a nuisance. But in my experience I am convinced that the White Holland and Bourbon Red varieties are considerably less given to wandering than the more aggressive Bronze variety.

The myriads of grasshoppers and insects devoured by our turkeys more than offset the injury they do to our crops, but this matter of crop injury will depend much on the kinds of crops that are grown.

The most important safeguard against loss of young turkeys is to keep them away from the farm buildings and chicken yards and runs.

The first layings of turkey eggs were hatched under chicken hens. I placed the poults in dry roomy coops in a field of oats or wheat, and enclosed the coops with planks twelve inches or more wide to form small yards. The poults are confined in these yards about five days. In a colder climate a little longer time would be required. They are then allowed to forage in the field with the hens when the weather is favorable.

While the poults are confined I feed them four times a day, using hard-boiled eggs and shells crushed, baked cornbread and finely chopped onions and cabbage; also sour skim-milk curd. This curd is sprinkled with black pepper. I feed only what will be cleaned up in a few minutes. Experience has proved to me that overfeeding has killed more young turkeys than disease.

The first week the poults are allowed outside the yard I feed sparingly three times a day, the second week twice a day, and after that once a day at night.

Unless protected from heavy dews and rains there will be heavy death losses until the poults are well feathered.

Next to overfeeding, lice causes the heaviest losses. I free the hens from lice before the poults hatch by dusting them and the nest with insect powder; and, to make doubly sure, I dip the chicken hens and turkey hens with one of the coal-tar dip preparations according to directions accompanying the package. After the mother hens have been thoroughly dried in a warm place, the poults are placed with them. When cooped in vermin-free coops in the field, away from farm buildings, the turkeys will then keep free from lice.

When diarrhea appears, which is generally induced by indigestion, I give each poult six drops of castor oil, and feed them very sparingly for the next day.

For a number of years I have successfully shipped turkey eggs for hatching by making use of the following plan: When the eggs are gathered daily I sort out any that are not well shaped or in good condition for hatching, and wrap each egg with paper. Then I place the eggs directly in the shipping crate, with the small ends down. When it is necessary to hold the eggs several days before shipping, I can then turn the crate over each day and save time.

Last year my White Holland breeding turkeys averaged me $8 a head. They began to lay in March, and by preventing them from sitting they laid until midsummer.

Good Stock Paid

By Anna W. Galligher

THERE are those who consider it simply throwing away money to buy either stock or hatching eggs at prices above the market.

We have at different times bought both breeding stock and eggs at what some considered high prices, but I cannot say that we were ever "stung." In almost every instance we were perfectly satisfied. When buying eggs for hatching, one is really buying stock and must take some chance, but chance plays some part in almost every enterprise.

Last year I decided to improve our flock by purchasing a hundred Rhode Island Red eggs. This order was sent to a reliable poultryman in Ohio who has gained a wide reputation for reasonable prices and fair play. I paid seven dollars for the hundred eggs. They arrived in good condition. Some were placed under hens at once. Others were wrapped in paper and put in a cool place to wait until more hens were ready to sit. The eggs were turned every day. The last of the eggs were set two weeks after they were unpacked. From this last setting of 15 eggs, 11 chicks hatched out. From the entire 100 eggs we got 82 fine chicks, and several hatchable eggs were broken by the sitting hens.

We raised 74 of the chicks. Several disappeared—probably taken by hawks. Not a chick died by any disease. They were as fine a bunch as could be found anywhere.

At the beginning of fall they were culled. All cockerels, except those needed for breeders, and four of the pullet culls were sold at the market price. These more than paid the cost of the eggs and the feed consumed by the birds sold.

We had left 40 fine pullets that were valued at $1 each when about ready to begin laying. At the present time these same hens are valued at a much higher figure.

Try to deal with someone not far away, if possible. Don't have eggs shipped halfway across the continent if you expect a good hatch—especially in hot weather.

IN THESE pages are put the things that the editor thinks are of interest to his readers. Perhaps something has been overlooked, or it may be that some statement is incomplete. If so, write to The Editor, FARM AND FIRESIDE, Springfield, Ohio. Tell him what the difficulty is, and he will be glad to help out where he can. FARM AND FIRESIDE is yours to use.

Stronger Chicks and More of Them

Don't waste a whole season—your time, temper and money. Start right. Your interests and ours are identical. You want better chicks and more of them—we want you to have them. X-Ray book tells how. Send for free copy.

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Duplex Central Heating Plant chases cold out of all the corners. X-Ray Automatic Trip keeps heat regulated exactly. *Fill the X-Ray Tank only one time—one gallon—for the entire hatch.* Hinged glass panel top permits you to see all that's going on in the hatching chamber without raising the top or even stooping. X-Ray perfectly level egg tray leaves all space available for eggs. **Fifteen big special features.** *Get free book* and see for yourself. *We pay express* to practically all points.

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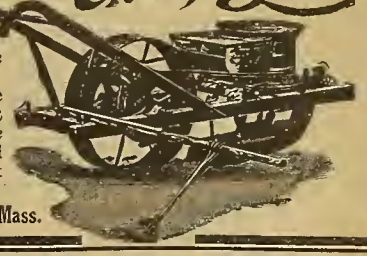

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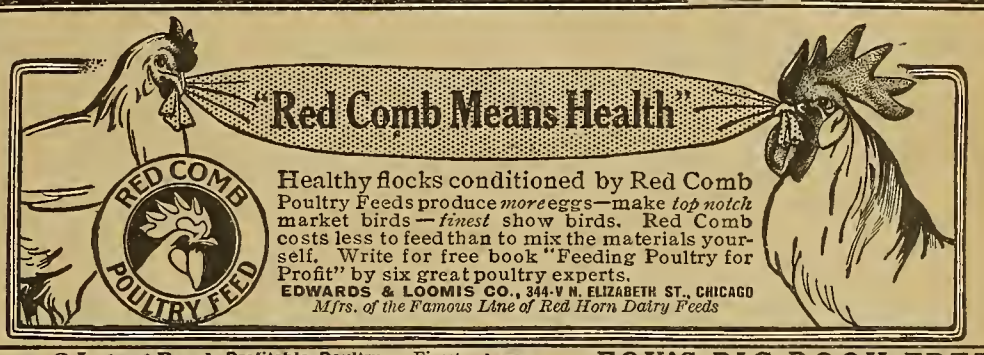

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Make money breeding PR squabs. 1916 demand biggest ever. Squab book free, telling money-making experiences. How to sell by parcel post, $6 to $8 doz. Start small, grow big. Many women customers. Write today. PLYMOUTH ROCK SQUAB CO., 603 HOWARD ST., MELROSE HIGHLANDS, MASSACHUSETTS.

SHOEMAKER'S BOOK on POULTRY

and Almanac for 1916 has 200 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about Incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c.

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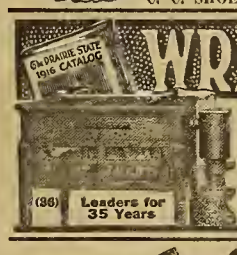
DETROIT CUTS THE COST

Here is the low priced famous Detroit Incubator—a wizard egg hatching machine, simple and reliable. Big hatches a sure thing. Large production makes my price low. Send Post Card now for my free book and startling price offer.

HOMER L. SMITH, Pres.

(1) Detroit Incubator Co., 450 Campbell Ave., Detroit, Mich.



WRITE Your Name on a Postal

and get our 1915 Incubator Book FREE and postpaid. Shows why Prairie State Incubators "hatch most chicks that five." Contains chapter on Poultry Diseases, also one on hatching and rearing.

PRAIRIE STATE INCUBATOR CO., 101 Main Street, Homer City, Pa.

(36) Leaders for 35 Years

Young's Portable Poultry Houses

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Prices $2 and up

E. C. YOUNG CO., 21 Depot St., Randolph, Mass.

Get FREE Chicken Book

Our big, illustrated, 1916 Year-Book—"Profits in Poultry Keeping"—will help you *make more money* with fowls. Tells how to raise chicks, get more eggs and make larger profits *with less work.* Learn about

Cyphers-Built Incubators Sold at Low Prices

Quality unequaled. Big hatches and a *guarantee* that protects you; backed by *30 years of leadership.* We want you to have a copy of this great Guide for Poultry Raisers. Write for it today—free.

CYPHERS INCUBATOR CO., Dept. 71, BUFFALO, N. Y.

New York Chicago Dallas Boston Kansas City Oakland

Ironclad TRADE MARK

WINS In 2 Biggest HATCHING CONTESTS Ever Held

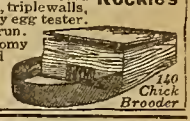
Mrs. C. F. Merrick, Lockney, Tex., with her 140 egg Ironclad Incubator wins in the Mo. Valley Farmer and Nebr. Farm Journal Big Hatching Contest. She placed 148 eggs in the incubator and hatched 148 strong chicks. Think of that. You can now get these famous winners, made of Calif. Redwood.

140 Egg Incubator 140 Chick Brooder BOTH FOR $10

Made of Redwood covered with galvanized iron.

If ordered together, 30 days' trial. 10-year Guarantee. Order direct from this advertisement—money back if not satisfactory. Incubator is covered with galvanized iron, triple walls, copper tank, nursery egg tester. Set up ready to run. The Brooder is roomy and well made. Send for free catalogue.

Freight Paid East of Rockies



Ironclad Incubator Co. Box 97, Racine, Wis. (3)

Planet Jr. Seeder and Cultivator

plants and cultivates in half the time

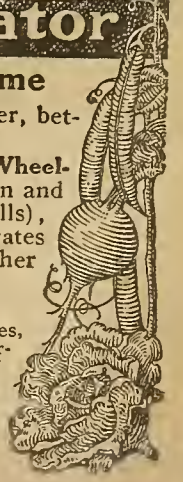
It takes drudgery out of garden work, and gets bigger, better crops besides. Fully guaranteed.

This **No. 4 Planet Jr Combined Hill and Drill Seeder, Wheel-Hoe, Cultivator and Plow** pays for itself in a single season and lasts a lifetime. Sows all garden seeds (in drills or hills), plows, opens furrows and covers them, hoes and cultivates easily and thoroughly all through the season. 30 other seeders and wheel hoes—various prices.

New 72-page Catalog (184 illustrations) **free!** Describes over 70 tools, including 12 entirely new ones, and improvements to our Seeders, Wheel-Hoes, Harrows, Orchard- and Beet-Cultivators. *Write postal for it today!*

S L Allen & Co Box 1107F Philadelphia

Whether you cultivate the smallest door-yard "patch" or the largest market garden you can't afford to work without a Planet Jr.



25 TIMES World's Champion Belle City Incubators and Brooders
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"In 25 World's Greatest Matches Belle City Won With Perfect Hatches"

402,000 in use. Get the whole wonderful story told by the championship winners themselves in my big
Free Book, "Hatching Facts"
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With book comes full description and illustration of my incubator and brooder in actual colors—the kind used by U. S. Government and leading Agricultural Colleges—
My Ten-Year Money-Back Guaranty
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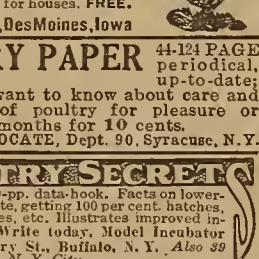
Same As Last Year
All facts, proofs, particulars—100 photographs of prize-winning hatches—
Also my $1300.00 Gold Offers
Conditions easy to receive biggest pay.
Learn how I paid one Belle City user $156.25; another $50, many from $45 down. Write me today. Jim Rohan, Pres.

Get My 1-2-3 Months' Home Test Offer Freight Prepaid
Belle City Incubator Co., Box 100, Racine, Wis.

43 VARIETIES Poultry, Pigeons, Ducks, Geese. Incubators, freight paid. Feed and supplies. Catalogue in colors free. Missouri Poultry & Squab Co., Dept. X.X., Kirkwood, Mo.

POULTRY Chickens, Incubators, Pigeons, Ducks, Geese from fast-maturing, egg-producing, thoroughbred stock. Catalog explaining all Free.
Box F. F. ROYAL POULTRY FARM Menominee, Mich.

MONEY-MAKING POULTRY
Our new book for 1916 tells about our leading varieties of land & water fowls, also incubators, brooders & squabs. High quality at low prices. 31st year. 96 page catalog FREE. H. M. JONES CO., Box 54, Des Moines, Ia.

PFILE'S 65 VARIETIES
farm-raised Land and Water-Fowls. Eggs in season. Illus. Catalogue, and "Grower's Guide," 2c. An honest deal. Write today. HENRY PFILE, Farmer-Poultryman, Box 627, Freeport, Ill.

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Throughout fifteen Eastern States, 1 acre to 1000 acres; $15 to $100 per acre; several with livestock, tools and crops included to settle estates. Big illustrated catalogue "Latest Bargains," free. E. A. STROUT FARM AGENCY, Dept. 2899, 49 W. 34th St., New York.

GREIDER'S FINE CATALOGUE
of pure bred poultry; 70 breeds illustrated and described, many in color. Perfect poultry guide—all facts. Low prices on stock and hatching eggs. Incubators and brooders. 23 years in business. You need this book. Send 10c for it—today.
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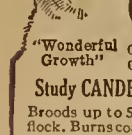
INDIAN RUNNER DUCK CULTURE
Finest illustrated duck book published. Tells how to hatch and care for greatest egg producing fowl on earth. How to get a start. Quotes low prices on stock and eggs of finest strains. Sent for 5 cents postage. Address
BERRY'S FARM, BOX 143, CLARINDA, IOWA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properly ventilated, sanitary; Rat, Mink, Weasel and Skunk proof. Made entirely of galvanized iron. Write today for circular and Special Prices.
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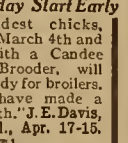
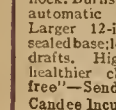
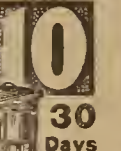
MONEY IN POULTRY AND SQUABS Start small. Grow BIG.
Get winter eggs. Keep healthy fowls. Save your chicks. Our Big Book Tells How. Shows fowls in natural colors, how to feed for eggs, select best layers, plans for houses. FREE.

Crescent Poultry Farms, Box 31, Des Moines, Iowa


POULTRY PAPER 44-124 PAGE periodical, up-to-date; tells all you want to know about care and management of poultry for pleasure or profit. Four months for 10 cents.
POULTRY ADVOCATE, Dept. 90, Syracuse, N.Y.

POULTRY SECRETS
Valuable 130-pp. data-book. Facts on lowering death-rate, getting 100 per cent. hatches, highest prices, etc. Illustrates improved incubators. Write today, Model Incubator Co., 12 Henry St., Buffalo, N. Y. Also 39 Barclay St., N. Y. City.

WHITE FLAME

BURNERS make your old kerosene lamps and lanterns give a brilliant white light better than electricity or gas. Doubles your light. Saves oil. No Mantle to Break. Guaranteed Safe and Reliable. Delights every user. Send now for complete sample postpaid 35 cts., stamps or coin—3 for $1. Money Back If Not Satisfactory.
Live Representatives Wanted. Exclusive Territory.
WHITE FLAME LIGHT CO., 69 Clark Bldg., Grand Rapids, Mich.

PIGEONS PAY
Better Than Chickens
Young pigeons (squabs) bring 40 to 60c each when 3 to 4 weeks old. Big demand in city markets. Each pair of pigeons easily clear $4 per year. Always penned up. Very little space and money needed to start. Free Book explains all.

FREE BOOK
MAJESTIC SQUAB CO., Dept. 10, ADEL, IOWA.

Illustrated Catalog
gives experience and shows results of Candee Operators.
CANDEE COLONY BROODER
Cast Iron Coal Burning-Self Regulating
"Wonderful Growth"
Write Today Start Early
"Our oldest chicks, hatched March 4th and raised with a Candee Colony Brooder, will very soon be ready for broilers. These chicks have made a wonderful growth." J. E. Davis, Bridgeville, Del., Apr. 17-15.
Study CANDEE Advantages
Broods up to 500 chicks in one flock. Burns coal—economical; automatic heat regulation. Larger 12-inch grate; safe, sealed base; long wool curtain stops drafts. High, roomy hover—healthier chicks. "Catalog is free"—Send for it.

Candee Incubator & Brooder Co., Dept. H, Eastwood, N. Y. Licensed by W. A. Schleit Mfg. Co. Inc.

Both Machines Freight Paid Only $10
Think of it! These two UNBEATABLE Wisconsin Machines—Winners in five great National Hatching Contests, both for only $10, freight paid east of Rockies. Guaranteed 10 years and sold on 30 Days' Trial—

130 Eggs 130 Chicks
30 Days Free Trial
MONEY BACK IF NOT SATISFIED
Wisconsins are made of genuine California Redwood. Incubators have double walls, double glass doors, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Biggest incubator bargain of the year. Send for our new 1916 catalog fully describing this outfit. A postal brings it by return mail.
180-Egg Incubator and Brooder, both only $12
WISCONSIN INCUBATOR COMPANY
Box 76, Racine, Wis.

Your Questions

Keep Brooders Warm

Are fireless brooders successful?

YES, when the temperature of the place in which they are kept does not fall lower than 50° F. Don't try to use them outdoors in the winter time or raw spring weather.

Dry-Dirt Cleanliness

I have difficulty in preventing my poultry houses—of which I have three—from becoming foul. I clean them out once every two weeks, but still the houses are ill-smelling. Can you suggest anything that will help out? I have plenty of litter available if I did not have to clean out so frequently, but it will not last if I use it liberally and throw it away or use it on the garden every two weeks.

H. B. P., Ohio.

PLENTY of dry dirt makes the most convenient and effective deodorizer I have yet found. The dirt sprinkled on the dropping boards, running boards, around nests, feed hoppers, and drink vessels keeps them from getting foul and soiled.

For the floor I have found that six inches of dry, clean, fresh dirt on a floor that is elevated a foot or more from the ground keeps the house in good condition. This dirt placed in the house in the fall as a foundation on which to use litter, such as cut straw, leaves, sawdust or shavings, solves the problem for the entire winter or longer.

The scratching of the hens in the litter keeps the droppings from becoming odorous and soiling the litter. I have handled poultry houses in this way for four years where one hen to each four square feet or less was housed, and sometimes have not removed the dirt from the house for a year or longer. When left this length of time, fresh dirt and litter are added occasionally.

I find my poultry houses handled in this way are in better sanitary condition at the end of the year than many houses that are cleaned every two or three weeks where ordinary litter alone is used.

This plan economizes time and insures dry, practically odorless houses, the dirt is a lice repellant, and in my case the fowls have kept exceptionally vigorous and free from disease. B. F. W. T.

From Other Letters

In a tile drain, does the water get in through the tile or enter at the joints?

Usually over nine tenths of the water enters a tile drain at the joints.

Where can I find out about barn ventilation, and do any of the systems pay out financially?

If you will draw a sketch of your barn showing floor plan and tell what stock you keep in the barn, we shall supply you with definite ventilating plans. In hay barns good ventilation helps to prevent overheating, and in stock barns a ventilating system guards the animals against tuberculosis, colds, and general bad health caused by impure air, ammonia gases, and excessive moisture.

I have a sow that has been vaccinated so she is immune from cholera. Can her pigs catch it?

Pigs from an immune sow are immune from cholera while they are nursing and as long as at least half their diet is the sow's milk. After that they may contract cholera unless protected by vaccination.

The water in my new concrete cistern seems to be hard. What makes it, and what can I do about it?

This is due to the lime and free alkali in the fresh concrete, and will in time disappear. The best remedy is to empty the cistern, and when the inside is thoroughly dry give it a brush coat of melted paraffin.

I notice your mention of Polled Holsteins. Is this a new breed?

No. The hornless character was officially recognized in 1887.

What is the best way to test milk for purity?

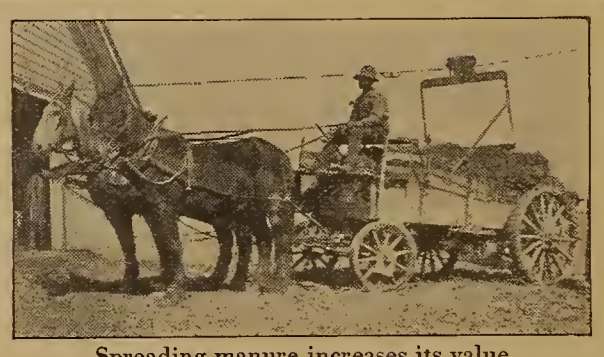
The simplest method is to filter it through a piece of clean absorbent cotton and then see how much sediment there is. The milk should be hot to filter well. The most exact test is bacteriological, and must be done by a specialist. This test tells the number and kind of germs, yeast cells, and mold in the milk. For adulteration, a chemical test is unnecessary.

The Next Issue News

Volume I Farm and Fireside Editor's Office *Number 7*

Making Manure Worth More Money

When the first manure spreader was brought into the neighborhood, one man announced that he would never have one of the "dad-burned things" on his premises. He had hauled manure out and spread it with a fork for twenty-five years and got along pretty well. Then lack of a spreader, which made necessary hurried makeshift work, cost him $250. That fall he bought a spreader. "Making Manure Worth More" will appear in the next issue of FARM AND FIRESIDE, the March 11th number.


Spreading manure increases its value

How to Raise More Corn This Year

Examination of more than 5,000 cornfields in 33 counties in Iowa during the last eight years has shown an average of only 71.7 per cent of a full stand of corn. The best stands of these fields produced 12 bushels more corn to the acre than did the average of the whole number of fields examined. On this basis the corn growers using the poor seed could have made money by paying $80 a bushel for seed like that which produced the best stand. How to get good seed corn, how to test it for germination, and how to get a good stand in the field is told in an article in the next issue.

The Champion Boy Potato Grower

A picture of your new Congressman being sworn in by Speaker Clark, the champion fifteen-year-old potato grower of the world, and how to lay out a foundation so the corners will be square are features of the picture page in the next issue of FARM AND FIRESIDE.

One Way to Buy Your Farm Machinery

An experienced farm manager was telling how he bought farm machinery. "What have you? What'll it do? and What's the price? These are the three questions I ask. I haven't time to spend a couple of hours with every agent or salesman who comes around, so I shoot those questions at them and look as fierce as I can." This farm manager's experiences with machinery are told in an article in the next issue.

Preparing a Good Seed Bed

No seed bed, however smooth on the surface, will raise the best crops if underneath there are clods and air spaces, neither of which will support rapid germination or plant growth. "From Drags to Cultivators," an article in the next issue, will tell how to correct such a condition. "To Plow More Corn" and "About New Plows" are other interesting machinery articles that will appear in the next issue, the March 11th number.

Here is the next-issue cover picture

Ergot, Not Alkali

What can I do with alkalied horses, cattle, and hogs? Also state why mules will not get alkalied? Horses lose their mane and tail and hoofs and the cattle hoofs seem to dry up. The lower part of the hoof becomes dead. Sometimes a crack comes at the place where the dead and the live hoof join.

B. S., South Dakota.

THE symptoms described are those of ergot poisoning (ergotism), not of alkali poisoning. Ergot *(Claviceps purpurea)* occurs as a purple-black spur of fungus, often called "smut" by farmers, filling and protruding from the seed husk of rye, barley, Juue grass, timothy, and many other cereals. On the prairie it is commonly found in wild oats or some grass.

This poison causes lesseuing of the caliber of the small blood vessels of the extremities, so that the normal supply of blood to these parts is lessened or cut off. Death of the parts (dry gangrene) occurs, and the horns, ears, tail, or hoofs may slough off. In cattle we find more commonly a deep slough of the tissues just above the ankle, so that the tendons and bone may be exposed. Sloughing of the entire foot may happen later in such a case. The trouble is most liable to attack cattle seriously in winter when they are wading in snow and slush, which naturally chills the extremities and lessens blood supply. There is no remedy Ergotted feed must be avoided. Where poisoning is due to alkali, there is derangement of the digestive organs, but we have not seen sloughing of extremities in such cases. Rain water has to be stored in cisterns and used for watering stock where alkali is in excess.

A. S. ALEXANDER.

Mix the Ground Feeds

Can you give me a plan for a cheap and practical machine for mixing grains or ground feed for chickens?

T. V. J., California.

USE a shovel on a tight floor or in a large box, putting the coarsest of the grain at the bottom and the finer in layers above. Mix thoroughly. More care is required with ground grain than with unground grains.

Thorough mixing is especially important when linseed meal, pea or bean meal, or other rich protein foods are in the mixture, as each bird should get its rightful share of these valuable foods. Under some conditions it will pay the poultryman to build a mechanical mixer. A good one may be made of a tight box of suitable size, with an opening in the side that will shut perfectly tight. Hang this box so that it can be rotated by a crank. It should not be filled over half full.

Pigs Have Rheumatism

What shall I do for one of my pigs that seems to have rheumatism?

O. C., Rhode Island.

MEDICINE seldom does much good. The cause of rheumatism among pigs is generally overheating and then a sudden chilling. Drafts are very bad for them. Pigs confined in small pens and yards are more apt to have it than those on pasture or in a large dry lot. Keep the pigs in a dry place, free from drafts, well bedded down. Feed some roots, sweet apples, pumpkins, or squashes, in winter, which will have a cooling and loosening effect on the bowels. Give the pigs plenty of exercise.

Be Careful

In your opinion, would the purchase of ten acres of land at a reasonable price, a few miles south of West Palm Beach, Florida, and one mile from Lake Worth, be a good investment, and can fair returns be made if it is planted out in grapefruit, pineapples, and oranges?

A. E. C., Illinois.

WE MIGHT just as well be asked, "How long is a string?" There is no way of telling except measuring the particular string in question. For instance, what is a reasonable price? Nobody can tell except by a careful examination of the particular piece of land in question as to soil, location, and neighborhood. The man who buys land without such examination is very foolish.

Nobody knows what the future will be in the grapefruit industry. Whether the markets can absorb all the grapefruit after the orchards now planted and being planted come into bearing is a question to which only the future can furnish an answer. Again, no plantation of such fruits as our subscriber mentions can be expected to succeed in the absence of the most careful and skillful management and good salesmanship in marketing. About the best answer to such queries is to be found in the two words, "Be careful."

E

Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

Coated Tongue

Please give me the cause for a coated tongue.
A. W., New York.

THERE are many causes; consequently, many remedies.

A thin, white, even furring of the tongue is normal in many healthy people, especially mouth breathers and smokers.

A white creamy fur is often seen upon the tongue of exclusive milk drinkers.

A flabby, swollen, and indented tongue covered with uniform yellow pasty fur is indicative of catarrhal gastritis or disease of the stomach and liver. Heavy smokers and drinkers have a similar fur on rising in the morning.

Cure Sore Gums

We are troubled with sore gums. Have had our teeth treated for the removal of tartar, but our gums remain sore and, if anything, grow worse. Our teeth are sound and hard but for the tartar and sore gums. *P. D. L., Vermont.*

IRRITATION of the mucous membrane, such as is caused by an accumulation of tartar, which has insinuated itself between the gums and the necks of the teeth, will provoke a mucous secretion decidedly acid and, as a consequence, destructive to tooth structure. Also derangements of the stomach and the alimentary canal are generally accompanied by acidity in the saliva. Cure lies in getting rid of the acid condition of your system. This you can do by taking a good dose of some saline laxative before breakfast, followed with from three to five soda-mint tablets after meals. Have the tartar removed, and keep it from forming by using a tube of tooth paste. Good, careful, persistent work may result in a cure.

Muscular Rheumatism

I have had muscular rheumatism for fifteen years and want a remedy.
W. R. W., Alabama.

YOU do not state just what variety of rheumatism you have, whether it is located in the muscles of the neck or in the back or in the side. I suspect you have chronic rheumatism instead. Clean your bowels out thoroughly and stimulate your liver to its proper activity, and take a capsule filled with salol and phenacetin, two and one half grains each, every three hours for a few days, and you will get relief.

Eczema of Hands

The skin on my thumbs and finger tips is very thin, and they crack and bleed when I work in the wet or when I work in the soil setting out plants or digging potatoes. They get very painful. I am a man of fifty-seven years of age and have been bothered only in late years.
M. D. B., Oregon.

PROTECT them from the wet and cold and bathe them with tincture of benzoin, glycerin, and alcohol, of each one ounce.

Hay Fever

I have suffered for years with hay fever, and would appreciate it if you would explain to me about the serum treatment. *Mrs. W. F. H., Montana.*

POLLEN extract prepared from the pollen of the ragweed is employed for the relief and prevention of hay fever. Treatment by this extract has seemed to give a degree of relief in a number of cases. The immunity from symptoms conferred by treatment in most cases lasts about a year.

Swollen Tongue

I am thirty-three years of age, and ever since I was fourteen my health has been bad. One of my troubles is with my throat and tongue. I cannot talk much or read aloud without tiring my tongue. Sometimes it aches so much, and feels ready to cramp, but does not. When my tongue bothers me most my throat is affected. *Mrs. F. K., Oregon.*

YOU certainly are in need of medical attention. You have no reason to be discouraged. However, it is well for you to recognize the seriousness of the trouble. The inflammation of your tongue might be due to many causes. There might be deposits of phosphatic coucretions in the crypts of the tongue which need to be pressed out, or there may be some iufection from the teeth if they are infected by pyorrhea. Have a microscopical examination made of the secretions from the tonsils and, if possible, have those infected and diseased tonsils removed by a competent surgeon. Then it may be well to take the tuberculin test for tuberculosis. At least, have your tongue and throat examined by a competent nose and throat specialist. You will be well repaid for doing so.

Appendicitis Cured

About fifteen years ago I was taken sick with appendicitis. As soon as I was able I went to work. In spite of good care and the taking of olive oil, the pains bother me. Sometimes the pains cause me to vomit. They come on after a meal, sometimes as late as four hours.
S. E. T., Michigan.

FIFTEEN years is long enough to suffer with au inflamed and diseased appendix. Have it removed and your troubles will end. An appendix like yours will infect the gall bladder with its poisonous germs. Removal means cure.

Sciatica

A short time ago I strained my back quite badly, and the doctor put a plaster on it, and then the pain went down from my back into my right hip, down into my knee and the calf of my leg and ankle. The doctor called it rheumatism. The pain is very severe, and when I am on my feet any length of time the pain is worse and can be relieved only by lying down. *C. A. C., New York.*

WHEN you sprained your back you injured the sciatic nerve, which is evidenced by the neuralgic pain extending down the leg. Sciatica is persistent and requires heroic treatment. The safest and most reliable treatment for you to use would be to take a capsule of phenacetiu 2½ grains, salol 2½ grains, every three hours, or a 5-grain pill of strontium salicylate every two hours.

Physicians are often compelled to inject strychnia or morphia into, or near, the nerve, or resort to stretching the nerve.

Stomatitis

What causes a red and burning tongue and red and sore mouth?
A. P., Indiana.

IT IS usually caused by some irritant, and it is often a concomitant of dyspepsia. Try a mouth wash of silver nitrate, four grains to an ounce of distilled water. Swab the tongue and mouth three times daily.

Hardening of Arteries

Is there any remedy for hardening of the arteries? *D. P. W., Pennsylvania.*

A QUIET, well-regulated life, free from excesses in eating and drinking, and avoidance of alcohol, tea, coffee, and rich foods.

Cases that have been caused by syphilis will require ten to fifteen grains of iodide of potash three times daily.

A Salt Eater

Is it injurious to the system to use salt to excess? My husband sprinkles his food thickly with salt before he eats it, even if it has been well salted before it comes to the table.
Mrs. E. E. D., Montana.

SALT is present in all the solids and fluids of the body, with the exception of the enamel of the teeth. It is introduced into the body in the form of nearly all foods and drinks. Each person contains about four or five ounces of salt in his system. Of this about ten per cent is consumed and eliminated daily—thrown off chiefly by skin and kidneys. This ten per cent would amount to as much as one-half ounce, and if your husband does not exceed another half-ounce, possibly the system could, or would, take care of it without detriment. Many persons are in the habit of taking a teaspoonful of salt in a glass of water before breakfast as a laxative and antiseptic.

E.W

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Your Favorite Magazines at Bargain Prices

Our special arrangements with several of the best selling magazines will expire shortly and we will, of course, have to discontinue our offers for the season. If you want good reading matter for 1916 you had better get busy and send in your order while the low rates hold good.

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FF-2-26

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Paula of the Movies

A Love Story in Three Parts—By EDWIN BAIRD

PART TWO

SAM LLEWELLYN, a farmer's son, fell in love with Paula Hunt when he saw her on the moving-picture screen in "The Spangled Slipper." He thought he could write a movie play. He did, but when he sent it away to be sold, it came quickly back. He resolved to carry it himself to the man who bought such things. He presented his play, "A Social Butterfly," to the editor's office, and the editor gave him a chance to look around the place with a guide. That led to the events in this part of our story and the next.

A GIRL sat at a grand piano, her fingers rippling dreamily over the keys; a man in evening clothes stood beside her, a violin tucked under his chin. He went through the movements of playing that instrument. Neither produced a sound. But a woman outside the camera's range played a Hungarian rhapsody on an upright piano, which doubtless lent an appearance of truth to the dumb play of the mute musicians.

At the conclusion of this performance the director shouted, "Everybody applaud!" and all broke into a furious handclapping.

Then a girl sprang up from an ornate divan and cried, "On with the dance!" the woman at the upright piano—who wouldn't appear in the picture—struck up a lively one-step, the girl at the grand piano awakened her dreamy fingers and still evoked no sound, and the assemblage began whirling.

"That'll do!" barked the director, and the whole business stopped. He stepped back, appraised the scene critically with narrowed eyes, ordered some slight changes in the setting; then, "Everybody ready now?"

Everybody was ready.

"Grind!" he called to the camera boy, who ground with diligence while the players performed their pantomime exactly as they had before.

Though Sam hadn't the slightest idea what it was all about, he found it very absorbing—more absorbing, in fact, than the finished product would be.

He couldn't quite accustom himself, however, to the make-up. The whitened faces looked ghastly in the artificial light, and the enlarged eyes, the penciled brows and carmined lips, bore small resemblance to anything human.

Sam, enthralled, had forgotten what accounted for his presence in this fantastic atmosphere; but in another minute he was reminded of it in a most emphatic way. A new group of players had emerged from a room farther down the studio hall, and now proceeded in his direction. Stepping aside to let them pass, he removed his eyes momentarily from the action before the cameras. And then his heart seemed to pump up into his throat and almost suffocate him, for there, so close that he might have touched her sleeve, was Paula Hunt!

HIS pulse pounding tumultuously, lips slightly parted, he stood staring at her. And yet, despite his inner turbulence, he was conscious of a small disappointment. Paula in the flesh, he at once observed, did not entice the eye as Paula on the screen had done. In the first place, she seemed less beautiful—possibly because she wore no make-up; and in the second, she was not attired in the exquisite silks and cloud-like tulle that had made her so enchanting in "The Spangled Slipper." Instead, she was dressed like a simple country maid, or at least like country maids dress in the land where the movies come from. At any rate, her sunbonnet and checkered apron were objects too familiar to Sam to suggest romance, and romance and Paula had, until now, been synonymous in his mind.

With no heed for his devouring gaze, without even glancing his way, she walked on, chatting with the man beside her. Sam saw, with an odd little stab of jealousy, that this man was the handsome, ox-eyed person who embraced Paula so rapturously in "The Spangled Slipper." In marked contrast to the others, he was clothed in the latest word of urban style, the others being appareled in rustic attire—according to the standard of movie-land—so exaggerated as to leave no trace of doubt about that.

While Sam was contemplating the remote possibility of tendering his plays to the actress, he was confronted by a wiry man in a light gray overcoat and horn-rimmed spectacles, who, gesturing to the performers moving on ahead, said in a matter-of-fact way:

"Ain'tcha going with that bunch?"

Before the surprised Sam could frame an answer to that question he was asked another:

"You're Bud Walsh, ain'tcha?"

"No; I'm Sam Llewellyn."

"Oh!" said the man in the gray coat, with an apologetic note in his voice. He turned and called to another man, who was passing with a band of gladiators: "Oh, Pat! Seen Bud Walsh anywhere to-day?"

"Saw him last night," answered Pat, "and he was stewed. Guess he's not showing to-day."

He wasn't sure what it was all about. The whitened faces looked ghastly in the artificial light

He of the gray coat looked back to Sam, and the alert eyes behind the horn-rimmed spectacles went intelligently over the young farmer's big body.

"You're the right type, anyway: big bones, strong muscles, broad hands, heavy jaw—" Sam began to feel like a prize steer on exhibition— "ever act in the movies?"

"No, but I've seen lots of 'em, and I've written two—"

"Ever chop wood?"

"If I had a dollar for every cord I've chopped—" Sam began afresh, and was again interrupted:

"Well, here's the proposition: we're going among the hicks to-day to take some farm stuff, and it seems I'm shy a man. The job's yours if you've nothing better on. There's three dollars and a quarter in it. What d'you say?"

Sam required less than two seconds to say, "I'm it," and as he followed the director to the street, where two automobiles waited to convey the players to their destination, he was picturing himself as a widely known film favorite.

BUT these delectable visions of himself as an actor in the films, instead of a writer for them, were not destined to thrive. He sat in the second automobile beside a black-haired young man who played second leads. His name was Charles Ripley, and he was not averse to talk. His talk was anything but encouraging:

"It's a rotten game, this life," he went on to say, "for a man like you. Take my advice, and stick to the farm."

Sam replied that nothing was farther from his mind than sticking to the farm, now that he had a chance to become a great moving-picture star.

Young Mr. Ripley surveyed him compassionately.

"Of course you're feeling a little puffed up—now. But it's only fair to tell you that your landing a job so easily today was nothing but blind luck. Old Carney took you because you happen to fit this particular stunt we're doing today like a stopper fits a bottle. But it may be weeks before we do any more farm stuff, and then where'll you be in the meantime?"

"Looking for a job in some other play," announced Sam promptly.

Mr. Ripley smiled as one who indulges a child's amusing whim.

"I wonder," he asked, selecting a cigarette and offering his case to Sam, "if you lamped that hungry mob in the vestibule this morning?"

Sam, declining the cigarettes, said, yes, he had lamped that mob and had reflected about it quite a little.

"Every morning," said the saddening Mr. Ripley, exhaling smoke, "that same gang of extras turns up, eager and expectant, and almost every morning they are turned down, unless, like you, one of 'em happens to be lucky. Then he gets three dollars and two bits for his day's work."

"But surely," protested Sam, "the studios have to get new people somewhere, sometime."

"True enough," agreed Mr. Ripley, wagging his solemn head; "but it happens that the supply exceeds the demand about four to one."

"I can write photoplays too," argued Sam, feeling a trifle warm under the collar. "I've already written two—"

"And had 'em both turned down, of course. You needn't tell me. They always are. I often think," mused the provoking young actor who played second leads, "that ninety million of America's hundred million inhabitants are writing photoplays. Old Doc Olliver gets a bushel of 'em every day."

Sam began to conceive a strong distaste for this man's conversation. He devoted his eye to the country through which they were passing—for Chicago was five miles behind them by now—and then he sat up with a little start.

"Where are we going?" he demanded.

"To a farm in Kane County owned by a man named Milton Wright. Why? Do you live down this way?"

"I live," said Sam, "within half a mile of the Wright farm."

Curiously, the statement caused Ripley to revert to his pessimism:

"I can't help feeling sorry for you, somehow. You don't know what a foolish play you're making—wanting to give up the farm and all for moving pictures. Why, when you come down to cases, the farmer is the only man in this Republic who really has any independence. You'd be surprised to know the number of players in our company who are saving up to buy farms. Take our leading woman, for instance,—Mrs. Mitchell,—she's crazy about farm life. So's her husband, for that matter. They're always talking of the time when they'll be able to ditch the movies for good and all, and go in for raising pigs and riding horseback, and feeding ducks and chickens, and raking hay and digging in the earth—"

"MRS. MITCHELL?" puzzled Sam. "I thought your leading woman was Paula Hunt."

Mr. Ripley laughed for the first time since Sam had made his acquaintance.

"So she is, old top." Then he pointed to the car ahead. "See that chap beside Paula yonder?"

Sam looked, and saw the ox-eyed Adonis sitting beside Paula in the tonneau, his arm extended along the back of the seat behind her shoulders.

"Sure, I see him," growled Sam.

"Well, that's Frank Mitchell—Paula's husband, you know."

Director Carney's choice of the Wright farm as a photoplay setting spoke well for his discerning eye. Moving-picture directors are always searching for picturesque scenes in which to film their outdoor stuff, and certainly the Wright farm was as alluring in that respect as any in the Middle West. The superb oaks, the splendid elms, the gentle slopes here and there, the tree-fringed creek winding through velvety meadows—all contributed to this.

ADMIRABLE, too, was Carney's choice of this day as just the right one for farm stuff. It was the fourth of November, and there had been a light frost last night, but to-day was genial and sunny, with a haze in the air that suggested Indian summer. The trees in every direction were a riot of glorious color. The fields, as far as the eye could reach, were golden with the harvest. Truly, here was a day that breathed of prosperity, peace, good will.

And the players from the city were not unappreciative. They alighted at the farmhouse with cries of delight, and with animation more genuine than they generally displayed in the studio.

Carney, tingling with energy, stepped down from the first automobile, and swept the surrounding country with a quick glance of satisfaction. His alert eyes lit on a pair of twin oaks outlined against an azure sky, and shone brighter still.

"Jove, what a set that'll make! Paula, we'll take you there, standing in the crotch of those trees. We'll get Frank in the picture. Sentiment business." He jerked a scenario from his overcoat pocket and began flipping over the pages with his thumb, which he moistened on his tongue. Several of the performers gathered around him. Others were starting off to explore the farm. Everybody seemed excited and joyous.

No; not everybody, either. Sam was profoundly dismal. He sat on the porch steps, trying to look indifferent, and stealing, from time to time, stealthy glances at Paula, who stood leaning against her husband, her right hand resting on his left shoulder. *Her husband!* Sam looked away, thoughtfully scratching the lobe of his ear. The last of his dream had vanished. There was nothing in writing for the movies; there was nothing in acting for them; and—*Paula was married!*

He was aroused from his gloomy reverie by the approach of newcomers. News of the players' arrival had spread, it seemed. At any rate, Mr. and Mrs. Wright and a crowd of young people had come from the house and were now on the porch behind him.

Rising, he saw Bessie Dwyer and George Peters there, and it was then he remembered that Bessie had told him of a nutting expedition scheduled for this day.

She came toward him, smiling.

"You're going with us after all, then, aren't you, Sam?"

SAM, being only twenty-two and possessing the vanity peculiar to that age, affected a jauntiness he was far from feeling.

"I don't see how I can, Bess. You see, I'm a movie actor now."

"A movie actor!" she exclaimed, her face quite blank. "Why, when did that happen? And how on earth—"

"I guess," said Sam with elaborate wit, "the Okay Company was smitten with my beautiful face. We handsome boys always get the plums in the movie business. I see they're getting ready to start now, so I guess I'll have to leave you. Hope you and Peters have a happy time to-day."

And then he was off after Carney and the others, who were moving round the house toward the rear. And again Miss Dwyer stared after him, as she had four days ago, with a great wonder in her brown eyes and a still greater fear in her heart.

She heard young Peters' voice beside her, saying with an attempt at tolerant amusement: "Wanta follow 'em and see what they're up to?"

She awoke from her brief abstraction with a little start.

"No. It's getting late. Don't you think we'd better be going?"

Carney's objective was the barnyard, and Sam speedily found that his services were not yet required. Indeed, if appearances counted for anything, Carney had forgotten his existence.

The director was busily employed now in rehearsing his leading woman, and her rapturous delight in feeding the ducks and chickens testified eloquently to her fondness for country life. She lifted a particularly fat goose in her arms, and while stroking its neck her husband, getting his cue from the director, came toward her, hat in hand, smiling blandly.

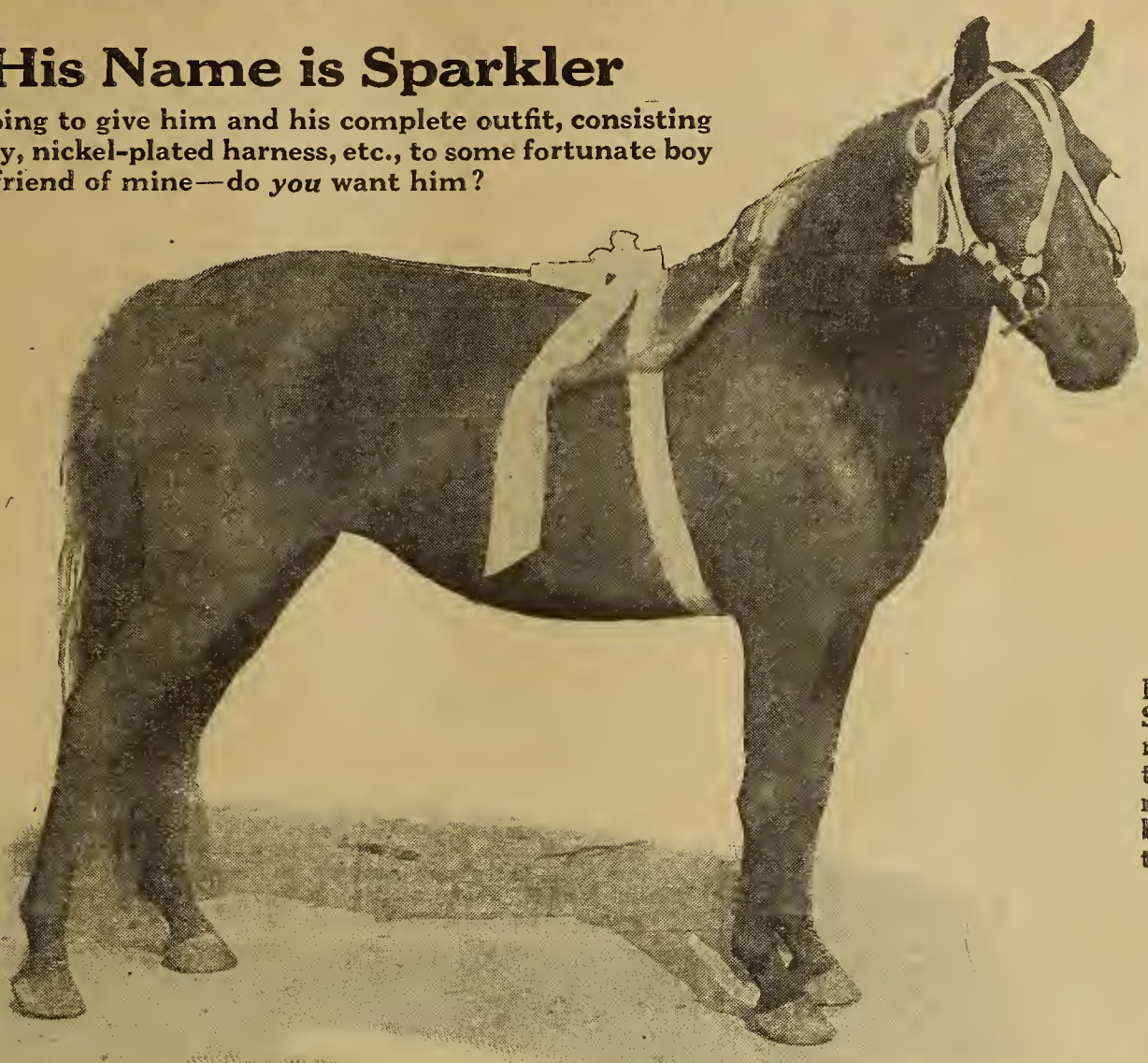
She exhibited extreme agitation at sight of him—frightened, evidently, yet admiring him too. Hugging the goose to her bosom, she looked up at him with a demure smile. [CONCLUDED IN NEXT ISSUE]

EW

WHO WANTS THIS PONY?

His Name is Sparkler

I am going to give him and his complete outfit, consisting of buggy, nickel-plated harness, etc., to some fortunate boy or girl friend of mine—do *you* want him?



This picture shows Sparkler all dressed up in his "Sunday clothes." Of course he wanted to look nice when he had his picture taken.

If you want to own Sparkler, get busy right *now*—clip the coupon and mail it. This will bring you full particulars.

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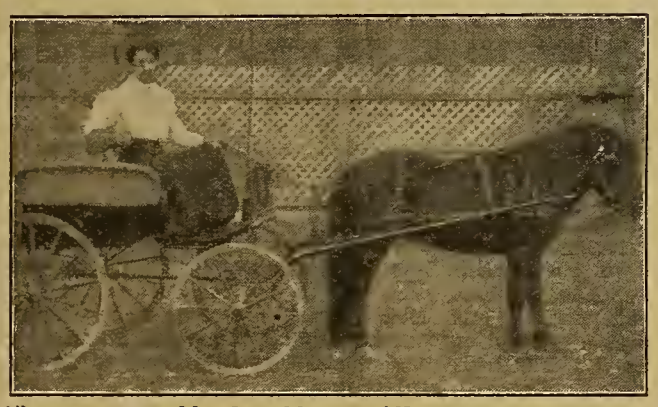
Look at These Happy Young Folks. I Gave These Ponies and Outfits to Their Proud Owners



Allow me to present **Miss Iona Morton, of Kernersville, N. C.,** and her pony Dandy. Iona writes me: "I certainly have 'dandy' times with Dandy and I am so glad 'Iona' pony." That's clever, isn't it?

Here is **John Kielen, of Rt. 4, Madison, Minn.,** and his pony Daisy. John writes: "I had an awful time getting this picture taken — Daisy wouldn't keep quiet. Just as the picture man snapped us Daisy opened her mouth and whinnied."

And here is little **Catherine Cissel, of Washington, D. C.,** and her pony Ginger. Catherine tells me she has great times driving around the National Capital.

It will bring you full particulars about the wonderful plan I have for giving ponies to boys and girls who join my Pony Club and display the right spirit.

Over One Hundred Boys and Girls Have Been Made Happy Owners of My Splendid Pony Outfits

On this page I show you the pictures of three of them and also give their names and addresses, so that you can write and ask them about it if you wish. I have a big collection of pictures of the other pony winners that I will send you if you send the coupon below. Remember, you will not have to spend one cent to get a pony. I want you to do a little easy work for me in your spare time. I'll tell you all about it when you send in the coupon and join the Pony Club.

Every Pony Club Member Will Receive a Present

As in addition to the pony outfits I give away lots of other things: Air Rifles, Bracelets, Watches, Dolls, Rings, etc.; in fact, I give a present to every member of the club.

If You Want Sparkler Better Get Busy To-day

As soon as I receive your name and address I will send you pictures of Sparkler, and full details of my plan, and will also explain how over a hundred of my boy and girl friends succeeded in securing ponies. Sparkler is certainly a handsome little chap and will make some boy or girl very happy.

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1000 Votes for You

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So be prompt—**Send the coupon to-day.** It will bring you full information about winning Sparkler for your very own.

UNCLE DAVE
Farm and Fireside Pony Man
Springfield, Ohio

UNCLE DAVE

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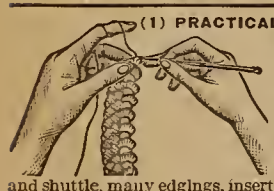

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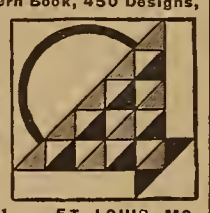

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Gets Rid of Dust

How Dora Delaven Cleans the House Easily

By AVIS GORDON VESTAL

CLEANING her house used to be a big black bugaboo to Dora Delaven, as it is yet to many of her friends. Of course "there's a reason," or there used to be one. In her bridal housekeeping year Dora had carpets tacked down upon all of her floors except the kitchen, which had a white, unfinished soft-wood floor that required much weary scrubbing. Dora swept her carpets with a broom, and used the customary short-handled dustpan. That meant stooping above the dustpan. It meant dust thrown into the air by the broom to settle upon the furniture. It meant that some dust always remained in the carpet until her semi-annual "tear-up," when all those carpets had to be untacked, lifted, carried out of doors, beaten, and then stretched and tacked down again, with an accompanying moving of heavy furniture, scrubbiug of floors, and waiting for them to dry.

"Home isn't home," John Delaven said during each April and October week of special housecleaning. "Everything is misplaced for the time being, and it's hard to get a clean shirt out of a bureau drawer that is facing the wall. The chairs are covered with pictures and books and curtains, but the house is no place to sit in even if you empty a chair. Dora's going around in her oldest clothes, with her pretty hair hidden under a swathing of towel. The meals aren't much to mention, and she's always so tired she can't be sociable with a fellow."

John, by the way, was not making any highly original statement. Thousands of men have hated those house-cleaning orgies as much as he, and some do not express their disapproval in printable language.

In addition to sweeping and backbreaking scrubbing there was dusting, and lots of it. Every sweeping stirred up Demon Dust. A feather duster was her weapon, and she fought ever a losing battle, for the feathers merely flirted the dust from a chair to let it settle upon a table or window sill. It didn't hold the dust so that it could be carried out of the house.

That is how things "used to was" in the Delaven farmhouse. Then Dora learned how she could keep her house cleaner all the year round, and with very much less time and effort. John appreciates the clean house and the absence of the special cleaning weeks so much that he does not begrudge her the cost of the tools that make possible the much-to-be-desired results. "The time and strength my wife saves from cleaning may save us a big doctor's bill," he declares, "and she is able now to keep a more live-with-able spirit, since she is not so pushed by her work."

Rugs Replace Carpets

The very first thing to do to lessen house-cleaning labor is to replace carpets by rugs and smooth borders, such as varnished or painted or oiled wood, or even the imitation wood veneers or oilcloth strips finished to resemble wood. Dora's carpets being nearly new, she did not feel she could replace them with new rugs, so she made over the old ones. The parlor Brussels carpet she made three feet smaller each way than the room by cutting that much from one end and ripping one width from the side. This left a foot and a half border on each side of the rug. The sides were finished by the selvages, the two ends she bound with a fringed rug braid, which is very cheap.

In the dining-room she had an ingrain carpet, which is not heavy enough to lie flat as a rug. Here, instead of cutting the carpet, she folded back two feet on each of the four sides, making a deep hem which she fastened beneath with long, loose stitches of embroidery cotton of the color predominating in the carpet.

The yard-wide strips cut from the parlor carpet made hall rugs, and she had rag rugs woven for the bedrooms, allowing two rugs, each one by two yards, for each room. John painted the floor borders in all the rooms. When they moved to Father Delaven's farm they were fortunate in finding a good oiled maple floor laid in the kitchen, and they are using their rugs in the other rooms with hard-pine borders.

New tools and new methods of work complete the routing of Demon Dust. John bought Dora a practical Christmas present, a carpet sweeper. This is easier to use on the rugs than a broom, it does not scatter dust, no stooping is needed, and all the dust and crumbs are gathered up and emptied out of doors each morning. Dora never lets the brushes get clogged with hairs and threads, but takes them out each time as she empties the dust, and John oils the bearings about twice a year. A good tool merits being kept clean and oiled.

The Delavens are very proud of their latest acquisition, a suction sweeper, which looks like a large carpet sweeper. It has bellows which are operated by pushing the tool back and forth across the rug. The fine dust that settles down into the nap of a rug or carpet, or sifts through a loosely woven rug to the floor, cannot be reached by either broom or brush carpet sweeper. With the suction sweeper used ten minutes a week on the large rugs they look fresher than ever before, and never need to be taken out of doors for beatiug. The suction cleaner has a revolving brush attachment to do the surface cleaning just as the carpet sweeper does, but, as the suction sweeper is heavier and not so easy to run as the carpet sweeper, Dora still uses the lighter sweeper for her regular morning cleaning.

With the banishment of the broom there is much less dust on the furniture than ever before. The feather duster is no more. It was followed by a dry cloth, which proved little better. A cloth wrung from clear water was a better duster, for it really held the dust it touched, but Dora found it left streaks unless carefully used. An oil duster was the next step in the evolution, a square of hemmed black cheesecloth soaked in a prepared oil and dried. This was very effective, but after a few usings it soiled her hand, aud it had to be washed and renewed occasionally. Now she has a perfect duster, a handle upon whose center is fastened a mass of black yarn chemically treated. It is better than the oiled cloth because it keeps the hands clean, it dusts a larger surface of wood at each sweep, and Dora can easily reach with it to dust baseboards, the tops of pictnres, and window and door casings.

For her polished bare-floor borders the broom and duster and water mop have given way to an oil mop of black yarn attached to a long handle. It picks up all of the dust and fluff and polishes the floor as it goes. After using, it is shaken out of doors. It is much easier to push than a mop of cloth heavy with water, and it gets the floors as clean. In ten minutes each morning Dora dusts all of the bare floors in her living-rooms and kitchen. She uses the water mop only if mud has been tracked in or food spilled.

Uses Broom for Coarse Work

She uses the common broom only for large litter, such as crumbs or excelsior or sawdust or scraps of paper, and with the broom she uses a splendid long-handled dustpan which has a lid to cover it when it is hung up, making it unnecessary to empty the box of the dustpan every day. Grease cannot sink into her oiled maple floor as it can into an unfinished soft-wood floor, which is so commou in farm homes, so Dora never gets down upon her knees to scrub and scour her kitchen floor. She merely wipes it once a week with a mop wrung from clear warm water, and dusts it the other days with the oil mop.

Dora keeps a fine general-utility oil always on hand now. It is used to replenish her mop and duster,—though that is not needed often,—for polishing furniture, and for oiling household and farm tools.

Window-washing is another task where a special tool can help. Dora does not like to sit outside her up-stairs windows while washiug them. Her safety window cleaner is an oblong block of wood over which she lays a folded cloth cut from an old Turkish towel. A metal rim clamps the cloth on. A long wooden handle with a hinged attachment to hold the cleaning block complete the tool. She can adjust the cleaning block to the desired angle by a screw. She lifts the window sashes in such a manner as always to keep an opening of about a foot between the sill and the sash and sits in a chair just inside the window. The tool is put out through the opening and by shifting the sashes upon their pulleys all of the outer surface of both sashes can be easily reached by the helpful tool.

After rubbing some cleaner on the outsides of all the windows and allowing it to dry she puts a clean cloth over the block and wipes them dry. If she preferred she could wash with water instead, for there is a rubber strip at the side of the metal rim to be used in wiping off the superfluous water, after which a dry cloth is put into the cleaner for polishing off the glass.

EDITOR'S NOTE: If any of these conveniences can not be secured at your dealer's, we shall be glad to direct you to the manufacturers if you will write to us.

Pin-Money Fancy Work

THIS Irish crochet insertion will make a dainty trimming for shirt waist, or baby cap, or boudoir cap, or a dozen and one other things. The directions, which will be sent upon request as noted below, are complete and plain, so that one familiar with the needle can make this design without trouble. Such insertion as this sells on the average market for $1 a yard, and its beauty makes it worth that price.

LACE to trim the summer dress should be made now. This design can be used with the insertion shown above. Fine thread makes the lace suitable for the dresses; coarser thread adapts the lace to dresser scarfs, collar and cuff sets, and the like. Directions for the insertion and the lace will be sent for six cents in stamps; or, if you prefer only one of the sets of directions, send four cents. Mail any requests or any questions you may have to the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

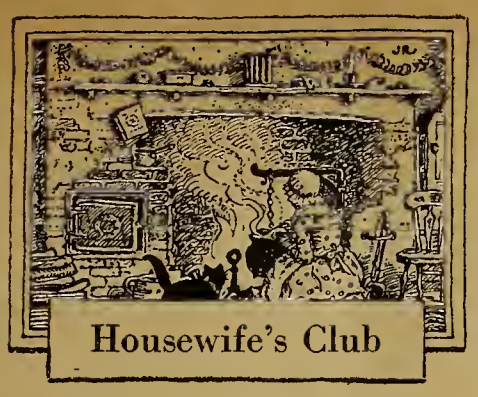
The Tale That is Told

By E. L. Vincent

NEVER let the love of gossip gain a hold, for in the eagerness to create a sensation truth is apt to suffer. Thus a woman's children see a man walking in his garden on Sunday morning, and the story goes to another that "the children saw Jones walking in his garden as they went along, and he was late to Sunday school." The second version is something like this: "Old Jones was hoeing potatoes in his garden on Sunday, and came rushing in late to Sunday school." Third telling: "Old Jones was at work in his garden Sunday, and came tearing into Sunday school when it was half over: didn't even stop to wash his hands. He didn't know that I saw him." Which she did not, the truth being that he was merely strolling about his garden, admiring it, and the children saw him.

So the story goes and grows, and there is a real neighborhood quarrel worked up over a false starting from idle imagining. Don't do it. It is exasperating, and a trick of the devil to catch both victim and gossip. If you know anything that would hurt a neighbor, even if it is true, forget it; keep silent. It is none of your business anyhow.

E.W



Housewife's Club

SAUSAGE-MEAT Dressing—Take a large cupful of lean aud oue of fat pork chopped fine, two cupfuls of bread crumbs, a tablespoonful of powdered sage, a blade of pounded mace, one-half teaspoonful of salt, dash of pepper, and one egg. Mix all well together, moisten with the egg, and after drying the inside well, stuff the turkey; place the liver under the wings, fasten a sheet of buttered paper over the breast, place in a moderate oven, and keep well basted. About an hour before serving, remove paper, dredge turkey lightly with flour, melt a piece of butter in the basting ladle, and pour over the breast. Iucrease the heat of the oveu to insure a nice brown. Serve with bread sauce and good browu gravy made by stewing gizzard, heart, aud ueck with half a pouud of lean beef.

C. L. O., Indiana.

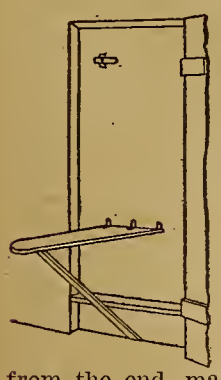
Danish Soup—For a family of six take a tweuty-ceut soup bone aud put on to boil. Simmer for two hours, add two carrots, two turnips, two potatoes, and two ouious peeled and sliced. Add a little parsley washed and tied together. Make meat balls for the soup as follows: Oue pound of Hamburger steak, oue egg, oue ouion, one teaspoonful of flour, salt and pepper. Mix together and make into balls. Add to soup, and cook one hour more. Season the soup to taste.

MRS. J. S., California.

Apple-Sauce Cake—Cream oue cupful of brown sugar with half a cupful of shorteniug. I use butter and lard mixed, and in seasous of very high prices I have used lard alone. Stir a teaspoonful of soda iuto oue cupful of apple sauce which has been sweeteued, aud add to the butter and sugar, beating well together. Now put iu spices to suit your taste, a teaspoonful of cinnamon and half a teaspoouful of cloves making a good combiuation, a little salt, a cupful of raisins, and two cupfuls of flour, sifted with a teaspoonful of baking powder. Bake in a loaf in a slow oven, for about an hour. This cake is very good and may be iced with a milk-aud-sugar icing, which makes it quite an additiou to the tea table. Boil oue cupful of sugar with two tablespoonfuls of milk uutil it will thread from the spoon. Take from the fire, aud beat until it is white and creamy. Flavor and spread ou the cake. C. M., Ohio.

Melt-in-your-Mouth Cookies—If you have sour cream you may make the most delicious cookies with ueither eggs nor butter. To oue cupful of sour cream add a teaspoonful of soda aud a pinch of salt, a cupful of sugar, aud flavoring to taste. Add flour euough to roll, cut out and bake. A still plainer but very good cooky, or wafer, is made by creaming a cupful of lard with a cupful of sugar. Then add half a cupful of milk, a teaspoonful of grated nutmeg, and flour euough to roll, addiug a heaping teaspoonful of baking powder with the flour. These are good rolled thin or thick.

A. W. D., New York.



Ironing Board—When fiuishing the inside of the kitchen, leave a space, unfinished, between two of the studding, in a convenient place for your ironing board. Hinge the board, as illustrated, at the proper height for ironing. Make a support of a 1x4-inch and hinge it to the ironing board about 12 or 14 inches from the end, making it long euough to hold the ironing board horizoutal, wheu the lower end rests against the wall on the floor. A small shelf is put under the ironing board to hold the irons, staud, aud holders. A button is placed at the top to hold the board when not iu use. Fit a door to this little ironing cupboard, and your ironing articles are out of the dust aud always steady and ready. MRS. L. W. B., Arkansas.

How to Use Old Rags—Take your rag sack and separate the rags into piles according to colors, and cut all the rags oue color into one and one-half inch strips; likewise cut all the other piles. Then begin with one pile, taking three strips, and make a three plait, usiug all the strips in that pile. It is best uot to sew all the strips iu one pile together at first, as it will make your strips too loug to plait couveuiently, but sew enough together to make each strip about three feet long. Likewise fix all the other piles. Then, begiuning with the first pile, roll the plait together in the shape of a saucer aud sew it in place; also take the plaits in the other piles and sew them around the saucer-like form, increasing the size. Coutinue to do so until you have used the plaits in all the piles. Wheu done you will have a nice circular rug. The color or design can be varied according to taste.

MRS. C. F. S., Alabama.

Warming the baby's milk at night or during the day when the fires are out was easy with this device. A narrow inch board was nailed perpendicularly to the back of the baby's washstand, just so the top was high enough to extend about half an inch above the height of the bedroom lamp. A circle about as large as the top of the lamp chimney was cut out of one side of the lid of a tin molasses bucket, aud a large nail driven through the opposite side down into the end of the board. With lamp lighted and set under the lid, the food may be warmed in a small tin vessel in five minutes or less. ROSA E. P., Indiana.

To Pack Household Linens

As we are intending to store our furniture for a year or so, I should greatly appreciate advice as to the best way to pack the bed and table linen, also blankets and curtains. Mrs. Wm. N., Iowa.

BED or table linen may be packed in either boxes or barrels, and it is a good plan to wrap it in blue tissue paper to keep it from turning yellow. All woolen materials, such as blankets and haugings, should be packed with plenty of moth balls, and it is ofteu a good idea to first line the boxes and barrels with uewspaper, as this, too, helps to keep away the moths.

Wanted—A Farm Home

I shall ask you to help me find a home on a farm for a boy of fifteen years old. I would like to find a home for him not too far from Chicago, where his father lives, with a farmer who would treat him as he would his own son. The boy has been on a farm for four years.

Mrs. M. A. O., Illinois.

FARM AND FIRESIDE seldom gets any requests from farmers asking for boys to work ou their farms or to live with them as one of the family. At preseut we have no knowledge of any opportunities of this kind.

We uuderstaud that the Division of Informatiou, Bureau of Immigratiou of the Departmeut of Labor, which has offices in differeut cities of the couutry, is doing quite a business in helping farmers to get people to work for them. It is altogether possible that they will help in cases such as you meutiou.

If you will write to the Divison of Informatiou, Bureau of Immigration, Department of Labor, Chicago, Illinois, and state your case, you will be advised whether they can be of assistauce to you.

This work of the Department of Labor is carried on without cost to those who are accommodated by it.

Moths in Comforters

I have just bought a wool bat for comforter and find there are moths in it. Can you tell me of any way to kill the moths and eggs before covering the comforter with cheese cloth? Would freezing have any effect? Mrs. C. E. W., Montana.

I THINK you can effectively get rid of moth eggs iu your wool intended for comforters by uurolling the bolt and ironing it with an iron which is hot enough to kill the moths and eggs without burning the wool itself. If a sheet of paper or a piece of cheesecloth is laid over the wool, there will be no danger of injuring it even with a very hot iron.

S. T. B., Illinois.

Who Can Answer These?

"Will someone who makes bread with what is called the starter please tell me how to start the starter, also directions for using it?" MRS. W. A., Michigan.

"Cau anyone tell me where I cau get the pattern for a star quilt like the one I saw at the Harvest Home Week Fair held at Coney Islaud, Cincinnati, the last week in August, 1915?"

MRS. J. B. M., Pennsylvania.

"My baby is fourteen months old and wants to eat. So far he has had only milk, soft-boiled egg, and crackers or dry bread. What else can I safely feed him?"

MRS. W. A. S., Texas.

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No. 2772

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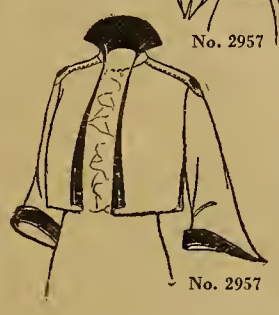
No. 2985

No. 2772—Girl's High-Waisted Dress, Kimono Sleeves. 1 to 6 years. Pattern, ten cents



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No. 2957—Eton Jacket with Bell Sleeves. 16 and 18 years, 36 and 38 bust. Suitable for dressy wear. Pattern, ten cents

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No. 2985—Plain Three-Piece Skirt. 24 to 32 waist. Pattern, ten cents

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No. 2983

No. 2982
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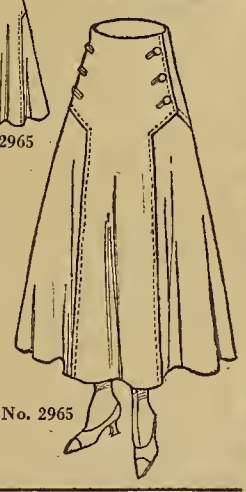
No. 2965

No. 2965—Skirt with Panels and Yoke in One. 24 to 32 waist. Pattern, ten cents



No. 2965

No. 2982—V-Neck Waist, Buttoned in Front. 36 to 46 bust. Pattern, ten cents

No. 2983—Plain Skirt with Pockets. 26 to 36 waist. Price of pattern, ten cents

TO ORDER: Send remittance to Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

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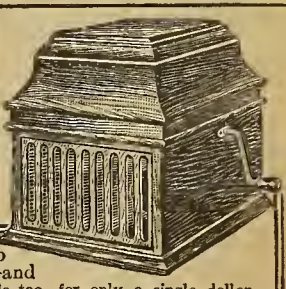

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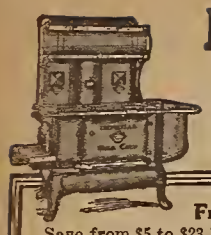

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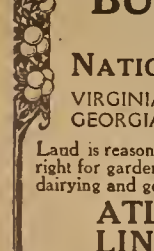

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Logan, Indian Chief

Little Polly Wins the Friendship of a Warrior

By EVERETT McNEIL

POLLY was just three feet and eight inches in height the day she met the Indian. She knew because that very morning her father had stood her up against the big barn door and measured her. Also, she was just five years and three months and two days and seven hours old, because that is what her mother, after thinking a little, told her when she had asked her that very morning at the breakfast table.

The Indian was big, bigger than Polly's father, and he must have been over thirty-eleven years old, Polly thought. He had funny feathers tied to his hair and queer streaks of paint on his face and, dear me, almost no clothing at all on the upper part of his body, except streaks of paint. There was a rifle in his hand and a knife and a tomahawk in his belt, and he looked so fierce and ugly that it is not to be wondered at if Polly was just a little mite frightened when she first saw him in the Still Pool, standing very close behind the little girl who lived in the pool and looking as if he meant to grab her any moment.

She had gone down to the Still Pool in the edge of the Big Woods, to see and talk to the little girl who lived in the pool and to show her her new rag doll that she herself had made the night before, helped just a little, but only a little, by the skilled fingers of her mother; and she had almost ran away. That is, she had not told her mother that she was going, but she intended to tell her just as soon as she got back. This, Polly thought, would be much the better way, since it would keep her mother from worrying while she was gone. You see Polly had reasoned it all out, to her own complete satisfaction, before she slipped off the little bed, where her mother supposed she still lay sound asleep, and had climbed out of the low window. Besides, she did so want to go to the Still Pool and talk to the little girl who lived in it, and show her her new doll; and mothers were so queer, specially about letting little girls go out of their sight. Anyway, she couldn't sleep, so what was the use of lying on the bed; and five minutes after her mother had left the room she had jumped off the bed and was out of the window and was hurrying on her way to the Still Pool in the edge of the Big Woods near-by.

Polly had been very much surprised to find that the little girl in the pool also had a new doll, and she was trying to get the little girl in the pool to tell her where she got it, when she suddenly saw the big Indian come up behind the little girl in the water and reach out his big hands as if he meant to grab her any moment.

At first sight of the Indian Polly almost screamed, but before the scream could get fairly out of her mouth she clapped one of her little hands over both lips and shut it in tight, because that very morning she had hear her father tell how an Indian had killed a little girl who had screamed when he caught her, but had only made a captive of her sister, who had kept still. Polly did not know exactly what it meant to be made a captive, but she felt quite sure that it was something better than being killed; and so she had quickly stifled the scream that she felt coming, and whirled about, intending to run home as fast as she could go and tell her father—and found herself facing a big Indian, standing with arms outstretched, as if he meant to grab her any moment, and looking so exactly like the one she had seen in the pool that Polly thought he must surely be his twin.

Again Polly's mouth opened, and again she stopped the scream that had started in her throat, before it could get out of her mouth, with one of her hands, and looked up bravely into the Indian's face. And, really, the eyes that looked down into her eyes did not seem so terrible to Polly after all; that is, if she did not take much notice of the fierce painted face all around them.

For a moment Polly and the Indian stood thus, each staring into the eyes of the other, and then Polly suddenly remembered that it was not polite to stare at a stranger, and that little girls should always be courteous to their elders; and,

In the pool she saw the big Indian

lowering her eyes, she gravely made her best bow and murmured timidly, "How do you do?"

The Indian stood and stared at her, a look of surprise on his face, his arms still outstretched.

Polly noticed the outstretched arms.

"Oh!" she said, smiling until her plump cheeks dimpled, "you want to take my doll, I guess," and, pressing a kiss on the charcoal-marked lips, she gravely laid the doll down in one of the big outstretched hands. "I made her myself," she continued confidingly. "Her name is Blossom. She is only a day old, but she is big for her age."

The Indian's painted face brightened slowly into a smile, a smile that somehow looked sad to Polly, and his black eyes rested a bit wistfully, if such fierce eyes could be said to rest wistfully, on the sweet roundness of her face, and his outstretched arms fell to his sides and he gently returned the doll to Polly.

"No, Logan is not a white man. He does not war on babes," he said, more to himself than to Polly. "Come," and, reaching out, he took one of Polly's little hands in his. "Logan will take white baby home. Woods not safe," and he strode off, with Polly trotting trustingly along by his side and wondering if this was what was meant by being made a captive. If it was, then it was not so very terrible, Polly thought.

In the edge of the woods the Indian paused and pointed to the little log house near the center of the clearing.

"Home?" he asked.

"Yes, that's my home," and Polly nodded her little head. "Papa and Mama live there with me. Mama will be glad to see you. Come," and she began pulling on the big hand that still held her little hand.

"No," and the face of the big Indian grew stern. "Logan will never enter the wigwam of a white man in peace again. Once Logan was the friend of the white man. They came and sat by his fire when they were cold. They ate of his food when they were hungry. They called Logan brother. But the white man repaid the kindness of Logan by murdering his wife and children and all his relations, and now the heart of Logan is heavy and he hates the white man. Go, tell your father that Logan wars not on babes, like the white man, or the scalp of his daughter would be hanging from the belt of Logan," and the big Indian dropped the hand of Polly and glided so swiftly off into the surrounding woods that he had disappeared almost before she knew that he was gone.

All this happened nearly one hundred and fifty years ago, and yet the descendants of Polly to this day are never tired of telling how their great-great-great-grandmother, when she was but little more than a baby, was captured by the famous Indian chief Logan the day she ran away to talk with the little girl who lived in the Still Pool in the edge of the Big Woods, and how the great chief had safely led her home by the hand, although his heart had been recently embittered against the whites by the most cruel murder of his wife and children and all his relations.

New Puzzles

A Quaint Old Rebus

I'm a strange contradiction: I'm new and I'm old,
I'm sometimes in tatters and sometimes in gold;
Though I never could read, yet lettered I'm found;
Though blind, I enlighten; though free, I am bound;
I'm English, I'm German, I'm French, and I'm Dutch;
Some love me too dearly, some slight me too much;
I often die young, though sometimes live ages,
And no queen is attended by so many pages.

Some Triple Decapitations

Pretty Marion took a ——,
Began to dress her raven ——,
Assuming a coquettish ——.

The rain came pouring down the ——,
Then Marion was in a ——.
For she intended to go ——.

Take a walk through the field of ——,
There, perchance, she'd meet her ——,
Now the plan she must give ——.

If Not, Why Not?

Christmas Day and New Year's Day fall as a rule upon the same day of the week. Now we will ask, can you ingenious readers tell why they will not fall upon the same day of the week in the year 1999?

Answers to Puzzles

Puzzles Printed Last Issue

Beheadings

Rice, ice. Grape, rape. Beagle, eagle. Steal, teal. Orange, range. Chive, hive. Shark, hark. Gumbo, umbo.

Charade

The answer is: Pennyroyal.

All on a Sunday Morning

By Horace Taylor

I II III IV

A Proven Mechanism

The New and Greater

CHANDLER SIX

$1295 F. O. B. CLEVELAND

THE new Chandler bodies, the most beautiful of the season's offerings, are attractive indeed. The New York and Chicago Show crowds admired, and purchased in great numbers, the new Chandler touring car and the new four-passenger roadster. At all the shows the country over, the New and Greater Chandler has been the center of greatest attention.

But the vital reason why so many thousands of motor car buyers are choosing the Chandler is the established and known excellence of the Chandler chassis —the Chandler mechanism.

In every essential way it is the same chassis on which, for three years, all Chandler bodies have been mounted. There is not a single hint of experimentation.

"The Marvelous Motor," built in the Chandler factory ever since this Leader of Light Sixes was first put on the market, has won its laurels and **still holds them.**

Interesting Features

In the face of higher cost of materials, nothing has been cut out of the Chandler. Highest quality equipment continues to be a feature.

Bosch High Tension Magneto, the most expensive and satisfactory ignition.
Gray & Davis Separate Unit Electric Starting and Lighting System.
Chandler aluminum crank case.
Chandler full-floating silent spiral bevel-gear rear axle.
Three silent enclosed chains driving motor shafts.
Annular ball bearings.
Stewart-Warner magnetic speedometer.
Stewart vacuum gasoline feed.
Non-skid tires in rear.
Deep cushioned upholstery covered with long-grain semi-glazed leather.

Seven-passenger touring car and four-passenger roadster, each $1295

It has always been powerful—powerful enough to do with ease anything that you could ask any automobile to do.

It has always been speedy—speedy enough to go faster than 999 out of every thousand car owners would ever want or dare to drive.

It has always been flexible—slowing down to a snail's pace on high, and jumping away instantly at the touch of the throttle.

It has always been economical in operation—owners **averaging** 16 miles per gallon of gasoline, 700 miles per gallon of oil and 7000 miles per set of tires.

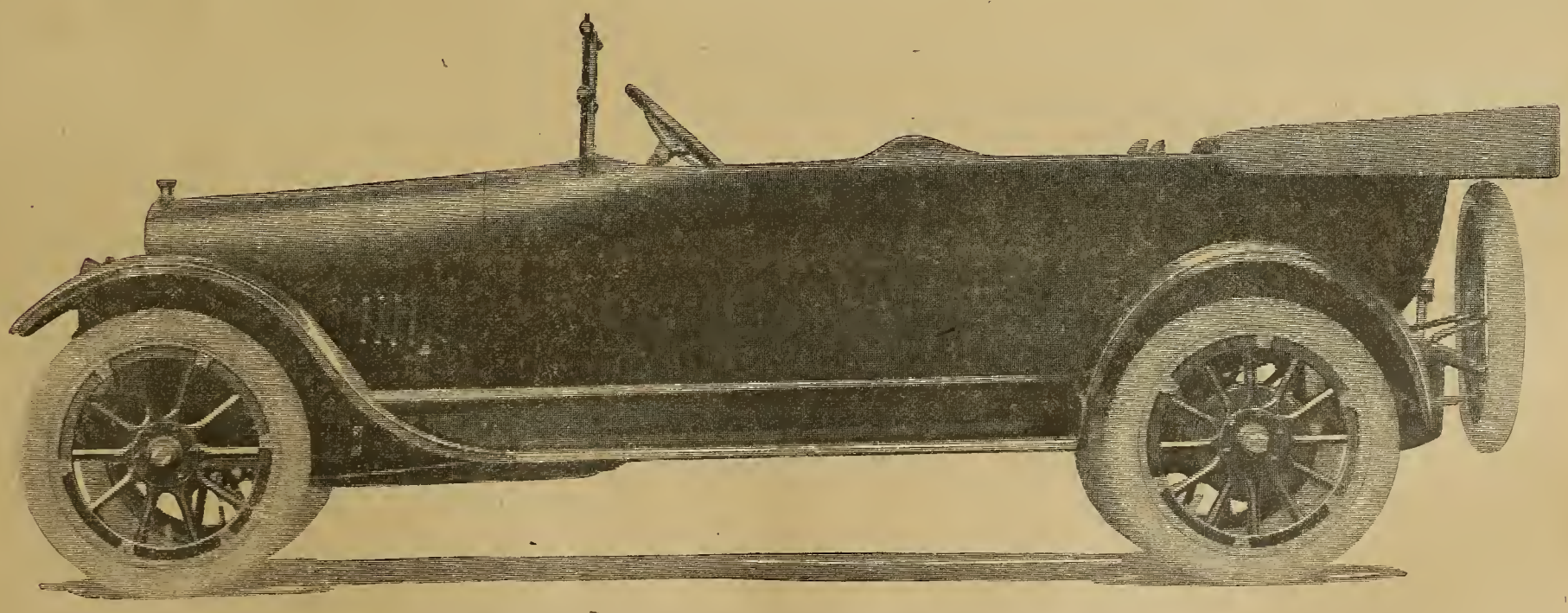
For three years it has had, and today has in even greater degree than ever before, **all** of these qualities you rightly demand in a high grade motor car.

It is a **known quality.**

And, more than ever in the past, automobile buyers this year recognize the security of dealing in known quantities.

Chandler production has been increased to 20,000 cars for 1916, but Chandler dealers say that even this great output will not take care of the demand for the New and Greater Six.

Good judgment will indicate the advisability of finding out for yourself all these things which thousands of Chandler owners now **know** to be true of the Chandler, and then placing your order at once.



The New Chandler Catalogue illustrates the New Big Touring Car, the Four-Passenger Roadster, other body types and all mechanical features fully

If you do not know your Chandler dealer, write us today

Chandler Motor Car Co., 1902-1932 E-131st St., Cleveland, Ohio

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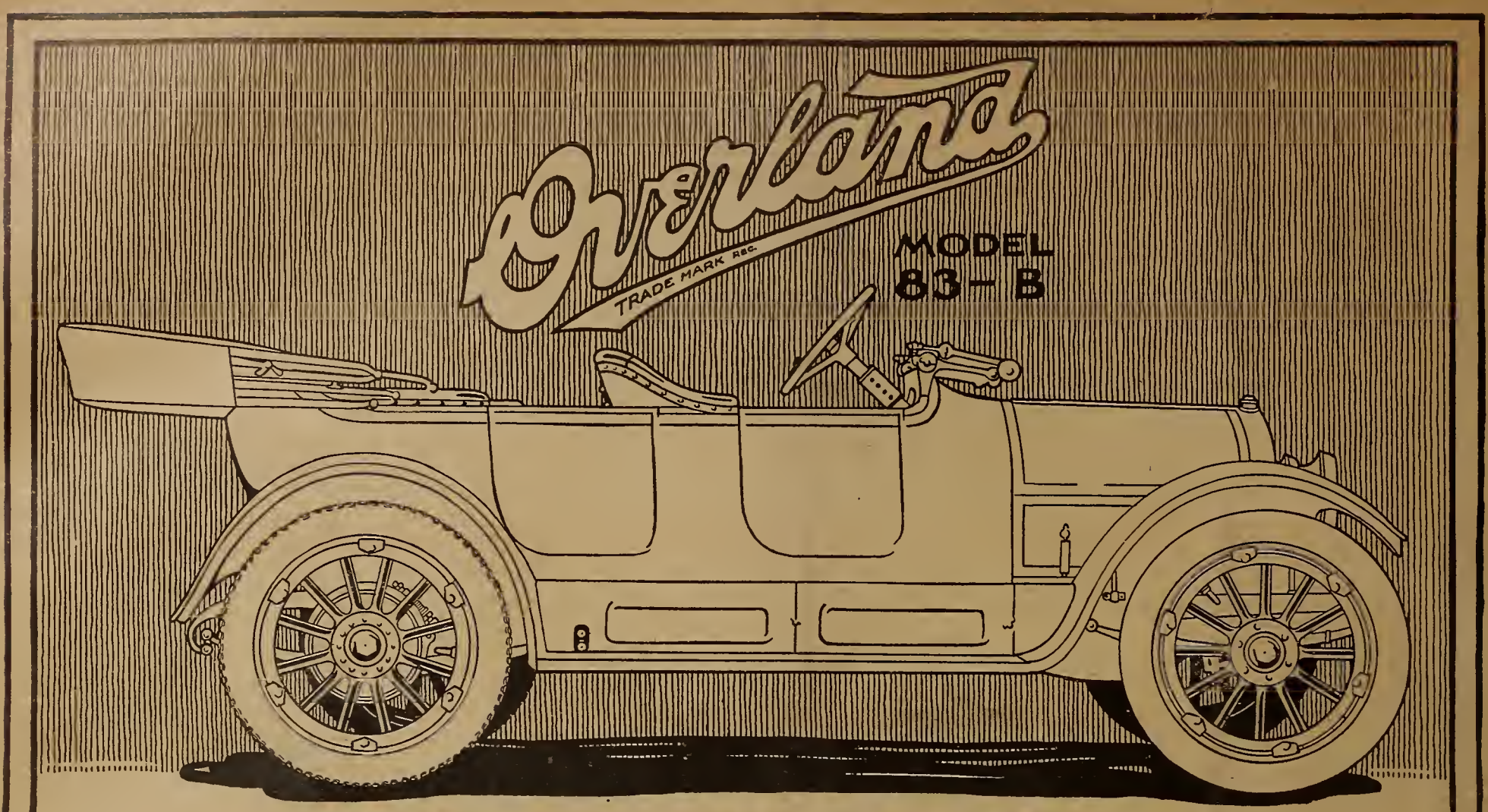

$695

Roadster $675
f. o. b. Toledo

Here is the car which is outselling— ***virtually two for one*** *—any other car with a wheelbase of more than 100 inches.*

Yet when we improved the car we reduced the price.

This was only a further repetition of Overland history—only a reaffirmation of Overland policy.

Time after time upon the completion of one production program we have announced arrangements completed for a bigger production and another new and unapproached standard of value.

But this time there is a difference—one which you must understand to appreciate how big a gap has been opened up between Overland value and any other.

This improved car at a reduced price would be only what you might expect with the announcement of our 1000-car-a-day production program—if conditions were normal.

But with material prices soaring higher and higher, increased output alone would not make possible the value represented in this car at this price.

Two new factors make such value possible at such a time.

And these new and unusual factors are exclusively Overland advantages.

The $750 Overland was such overwhelming value that the public bought in six months what we had figured as a year's output.

So all the experimental and preparation expense, all the general or overhead expense which is usually spread over a year was absorbed in six months.

Our material contracts for this model were made at before-the-war prices and we saved three and a half million dollars on aluminum alone and another million dollars on steel.

It is this combination of very unusual and exclusive Overland conditions which makes possible the $695 price.

In size and comfort it is the same big beautiful Overland which even at $750 was the dominant value which outsold, virtually two for one, any other car of anywhere near its size.

But we have improved the upholstery.

And the electrical control box on the steering column is operated by buttons instead of switches.

And it has the very latest en bloc type motor with a smooth flow of abundant power and an exceptionally fast "pick-up."

Invariably conditions even less favorable to the buyer have been accompanied by a long period during which we have been thousands of cars short of satisfying the demand.

These present conditions are unusual and though we guarantee that the price for this model will never be lower, we must reserve the right to increase it at any time.

Now is the time to order your car either for immediate or future delivery.

See the Overland dealer and make your arrangements now.

For those who prefer a smaller car there is the Model 75 Overland at $615 for the touring car and $595 for the roadster.

And for those who need a seven-passenger car, there is the big, roomy, comfortable Model 86, six-cylinder Overland at $1145—all prices f. o. b. Toledo.

Catalog on request. Please address Dept. 62

The Willys-Overland Company, Toledo, Ohio

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FARM and FIRESIDE

The National Farm Paper - Every Other Week

ESTABLISHED 1877

5 cents a copy

Saturday, March 11, 1916

Giving King Corn His Start

GOODYEAR
AKRON
TIRES

Goodyear No-Hook Tires
Are Fortified Against:

Rim Cutting—By our No-Rim-Cut Feature.
Blow-Outs—By our On-Air Cure.
Loose Treads—By our Rubber Rivets.
Insecurity—By our Multiple Braided Piano Wire Base.
Punctures and Skidding—By our Double-Thick All-Weather Tread.

Every Goodyear Feature Yields Greater Mileage

We constantly seek new ways to improve Goodyear Tires.

Our aim and ambition is that every user shall get all the miles we build into Goodyear Tires, with the least trouble and the smallest expense.

But we do not depend upon rubber alone for Goodyear mileage, nor on fabric alone; nor alone on the skillful combination of the two.

We use the best rubber the world produces; we compound it by processes which our experience and Goodyear users' experience has proved best.

We make much of our fabric in our own mills; all our fabric is made to Goodyear specifications, as we have told you.

Our laboratory experts, and our practical factory men, never cease their efforts to safeguard Goodyear users against the common tire troubles.

The former are abreast of all new discoveries in the rubber field; they devise many ways of their own to toughen rubber to make it wear longer and better.

The latter know how to meet the difficulties of all roads. They take into account all the abuses a tire will receive, and they seek to make Goodyear Tires superior to abuse, misuse and wretched roads.

Rim-cutting was a common fault of tires until Goodyear devised its No-Rim-Cut feature. Then it ceased to be a terror of motoring.

The Goodyear On-Air cure reduces the risk of blow-outs.

This process means that when the tire is ready for final vulcanization, an air-filled bag is placed inside it.

The air pressure in the bag smooths the fabric, so that it is not wrinkled or buckled or bunched. Fabric not entirely smooth under the rubber tread is weak and invites blow-outs.

Our Rubber Rivets minimize loose treads—and a loose tread means a ruined tire.

In the Goodyear, the tread is welded to the body of the tire by hundreds of rivets of solid rubber, which flow through little spaces made in the fabric for that very purpose.

It is almost impossible for a Goodyear Tread to separate from the body of the tire until worn through to the fabric.

We guard against insecurity, and against tube pinching, by vulcanizing many braided piano wires into the base of the tire.

These hold the tire firm and flat on the rim at all times, regardless of the roughness of the road or other conditions.

Puncture and skidding are guarded against by the double thickness of the All-Weather Tread, and the sharp, square blocks, biting deep into a soft road, afford positive traction.

Each of these Goodyear features makes its worth felt in the trouble it fends off, in the extra miles it returns.

They are all a part of the Goodyear policy of building the highest quality into a tire, so that the user can get the greatest mileage at the lowest cost.

A policy which has made Goodyear the one favored tire on the farm, in the towns, and in the cities, in all sections everywhere, with almost 200 brands for every buyer to choose from.

Goodyear Tire & Rubber Company, Akron, Ohio

E IV

FARM and FIRESIDE

—PUBLISHED BY—

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

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Vol. XXXIX. No. 12 SATURDAY, MARCH 11, 1916 *Published Bi-Weekly*

Making Manure Worth More

When the First Spreader was Brought into a Corn-Belt Community

By WILLIAM JOHNSON

WHEN the first mauure spreader came into our neighborhood there was one man who auuounced that he never would have one of the "dad-burned things" on his premises. He had "hauled manure out and spread it with a fork for twenty-five years and got along pretty well, too," and he reckoned that he would continue to haul it out that way as long as he farmed.

For a time he kept his word. Then there came a winter and spring of very bad weather. Work was delayed, the manure accumulated in a great pile back of the barn and, to top it all off, oue of his men quit and he couldn't get another. It was slow work hauling that great pile of manure out in the old way, and of course each load was thrown off as quickly as possible. Iu unbroken chuuks aud wads it was plowed under.

The late spring and summer turned as suddenly aud thoroughly dry as earlier it had been wet. You know how land will dry out in such weather when a thick carpet of coarse, lumpy manure has beeu plowed into it late in the seasou. The coru burned, turned yellow, and made about half a crop. A neighbor across the road who had applied manure with a spreader to fall plowing and disked it in got a fine crop of corn ou land not a whit better, from seed not quite so good. By comparison, the lack of a spreader, which made necessary hurried makeshift work, cost something like $250. That fall the man who had haud-forked manure for twenty-five years and would continue to hand-fork it as long as he farmed bought a spreader. And uow after a few years of use he admits that "it's a great thiug."

The boys are euthusiastic about the spreader. It is a wonderful sight easier to sit down and spread manure, the horses doiug the work, than it is to stand up aud spread it, supplying the power yourself. It allows a fellow to think about fishing, or the great ball game that is comiug off in the village Saturday afternoon. And, what is better yet, the work is so much more quickly done that it gives a fellow a chance to go fishing or to see the ball game.

But I think the old farm is more enthusiastic about the spreader than is either its owner or his boys. There is a right way and a wrong way to handle manure, and the land quickly tells which is practiced. The spreader makes the right way easier than the wrong way is without it. A man is pretty apt to do thiugs the easiest way—if he is an average busy farmer he must, if he is going to get them done at all—and iu this case the easiest way is most profitable.

A manure spreader is worth the difference between what manure will yield when left in a pile under the barn-roof eaves, or wheu dumped off in heaps in the field, or even well spread by hand, and what it will yield wheu applied to the land fresh from the stables iu fiue, well-distributed condition—plus the value of the labor it saves.

The usual valuation of manure at around $2 a ton is way too low. From the standpoint of actual fertilizer conteut this may be correct, but the proper value is the dollars and cents result of its good effects. We do not value a horse by the market price of the elemeuts composing its body, or medicine by the cost of the drugs that it contains. Rather, we value the horse by his power to perform and the medicine by its potency to cure. Let us apply to manure like standards of judgment.

It will keep fertile land in that condition, and restore worn soil to its virgin productivity. It prepares the way for luxuriaut crops of clover and alfalfa on soils where these cannot otherwise be grown. It intensifies the good effects of crop rotation, good tillage, liming, use of commercial fertilizers, aud the like, and is the strongest link in the chain of good farm practice that prevents soil-washing, loss from drought and wet, and like evils. Its free and proper use makes the main difference between farming that pays and drudgery that doesn't. Surely, this is worth more than a hundred or two or three hundred dollars a year. Such a valuation is akin to valuing the binder that makes possible the growing of great areas of grain by one man, at the market price of the iron and wood enteriug into its construction.

The usual value of manure at $2 a ton is too low. From the actual fertilizer content this may be true. The proper value of manure is the dollars and cents result of its good effect

Manure Loses Fertility Quickly

FROM this viewpoint the loss that results from the careless handling of mauure assumes something of its true siguificance. Men who have experimented in the matter, aud studied it closely, tell us that manure will lose half its fertilizing value when exposed to the weather in a pile for four months, as is pretty apt to be the case when a man has no spreader to make easy immediate hauling out. The fermeuting, steaming, burniug, and leaching, which represent loss in the manure pile in the barnyard, indicate activities which should take place in the soil. There they may mean anything from five bushels more of grain to the acre to getting an automobile aud keeping the boys and girls on the farm.

Releases Plant Food in the Soil

WITHOUT going into chemistry at all, the greatest good from manure is the effect it has on the soil, iu speediug up the bacterial activity which gets the native fertility of the soil in a form that the plauts can use. In the tiny soil grains this fertility is locked, aud the greater the number touched by the manure the greater this effect will be; aud the more finely the manure is distributed the more soil grains it will come in contact with; also the more acres a giveu quantity of manure will cover. Experience has proved that little and often is the best rule for applyiug manure. In my own experience, 15 loads to the acre, distributed with a spreader, have given as good results as 20 loads applied with a fork—far better in dry seasons, when coarse manure plowed into the soil hastens its drying out. This means that a fourth more land is manured each year with practically the same increase in yield obtained from each acre.

It is practically impossible to spread manure on meadow land with a fork fine enough so that the straw will not be raked up with the hay, thereby lowering the quality of the crop. But with a spreader the manure is torn to fine bits and is beaten iuto the sod by rains. The result is an iucreased crop of high-class forage. Humus is the prime need of most soils. We get it this way in increased quantity. The manure will cause a far greater bulk of grass roots to decay in the soil than it contains bulk of vegetable matter in itself. And none of the fertility of the manure is lost.

Next to meadow land, the best place to put manure is on fall plowing through the winter and spring, disking it into the soil before planting time. Here again the spreader is a great help. It is difficult—sometimes impossible—to disk coarse manure into the soil, but when applied with a spreader the work is easy. The fineness of the manure makes its fertility quickly available. It washes down to the roots of the crop sooner than capillarity will bring it up to the roots, or sooner thau the roots cau grow down to the manure. The youug plauts get the stimulation of ready fertility at the earliest stage of their growth when they most need it.

I have thoroughly tried out the two systems of applying manure for corn and potatoes, with wheat and oats following both crops, and in ordinary seasons the fine surface application gave as much as five bushels more of coru and fifteen bushels of potatoes to the acre over heavier applications plowed in. The soil was a clay loam in both cases, aud the seed aud cultivation given were the same. I believe that on sandy soil, where leachiug is a factor of larger importauce, surface applications would show au eveu greater profit over plowing the manure under. Ou this clay loam soil, I have got good crops by applying manure to the surface and disking it in, in seasons of dry weather, wheu coarse manure plowed under was responsible for a crop failure. The surface applicatiou acted as a mulch, but the manure plowed under simply fenced the surface soil off from the subsoil, and so preveuted the free movement of moisture upward.

Eveu though a man who has uo spreader makes a practice of hauling aud spreading manure in the winter, there will be quite a large accumulation of it through late winter and spring when the land is too soft to drive ou. Having no spreader, the accumulation of manure will be larger, because for reasons mentioued he caunot apply mauure to the meadow land ou which it is possible to drive when the stubble or plowed laud is too soft. Eveu though a man has the time, labor, aud patience to apply manure the best that it can be done by hand, he cannot possibly get as good results as the spreader will give.

When the land gets dry enough to begin the manure-hauling, the rush of spring work is on, and it is of the utmost importance that work be done quickly. A day saved may be worth $50. It may mean getting 10 or 20 acres of grain sowed or corn planted when couditions are just right. The manure spreader will save at least a day on each three days of manure hauling. It permits a boy to do a man's work in spreading—to do better work than any two men can do by hand.

If you write the editors of FARM AND FIRESIDE at Springfield, Ohio, the amount of live stock you keep on your farm, the number of acres you have, the kind of crops you raise, and the help you have, they can tell you the kind of manure spreader suited to your farm, and what to pay for it. If you are using a spreader now, the editors will be glad to hear your experiences.

E W

From Drags to Cultivators

Humble and Necessary Tools that Start the Bumper Crops

By B. D. STOCKWELL

THIS is an article about improvements in dirt-scratching machinery—machinery which on the whole is not so spectacular or thrilling as some other kinds of farm implements, but which will surely interest the man who is looking for big stauds, or who wants to shed only one drop of sweat where he used to shed ten in getting his seed bed ready for planting.

Rolling pulverizers have lately appeared on the market in a wide range of sizes and design. These tools are immensely popular in proportion to the time they have been in use, and the qualities which have made them so are the ease and the speed with which you can reduce rough-plowed ground to a nice seed bed. These rolling pulverizers are a development of the old log roller. They are made up of a series of wheels running on roller bearings and having V-shaped edges which mash the lumps of soil and firmly compress the dust.

No seed bed, however smooth on the surface, will raise the best crops if underneath there are clods and air spaces neither of which will support rapid germination or plant growth. But with your rolling pulverizer you crush not only the lumps you can see but those five inches below the surface as well. You can also use it on a field after the seed has been sown.

A spike-tooth harrow—sometimes called peg-tooth—is perhaps the quickest tool of all for reducing plowed ground to lumps of fairly small size. That's one of its good points. But after going over the average field about twice the spike-tooth harrow becomes almost useless for getting rid of the remaining clods, especially if they have become dry. That's its chief bad point. If you now go on such a field with a plank drag or a common roller, you're going to leave a lot of fine dust on the surface to blow away in dry weather and wash away if the season is wet.

Rolling pulverizers have all the earmarks of a subsurface packer developed and adapted for humid regions. The disks can be had with the V-shaped face either sharp, for deep penetration, or a blunt, for shallower work and packing. By an ingenious clamping device some of the disks may be removed and the others held apart so the machine can be used for straddling corn rows to firm the soil. When working to prevent soil-blowing, best results are secured by making the ridges at right angles to direction of prevailing winds. The little ridges seem to create eddies in the wind sweeping across the field, and although some of the surface dust may be carried a short distance it will not blow as far as on a flat field.

The garden size of this style of pulverizer is about two feet wide, and is easily pulled by hand. Field sizes are made with wheels 3 to 4 inches wide, 12 to 20 inches high, weight from 600 to 2,250 pounds, and widths from 5 to 15 feet. An eight-foot size weighing 1,000 pounds makes a good practical pulverizer for the average farm. This size will cost around $35. Rolling pulverizers require somewhat less draft than a disk harrow; for medium sizes two good horses are enough unless the farm is hilly. These pulverizers are also made in tandem—one set of rollers behind the other, so the rear rollers split the ridges made by the front rollers.

Various improvements in harrows still continue to appear—some to meet the demands of a new crop, and others to satisfy the eternal demand for the same efficiency with less work. Spring-tooth harrows now have wheels and a seat so the driver can ride, and he can even have an umbrella for shade. Some of the new spring-tooth cultivators have teeth suitable for alfalfa cultivation. These teeth are rather narrow, blunt, and shaped at the end something like the head of a grass snake. They are flexible enough to sidestep the alfalfa crowns and, in so doing, rout out the weeds near them, at the same time loosening the soil.

In spike-tooth harrows development is toward smaller and lighter sections. This will be good news to the man who does his work alone, or to the lightweight hired man. Many of the sections weigh less than 50 pounds apiece, and a few less than 25 pounds, as compared with the usual weight of about 100 pounds for a standard four-foot section. Some are three feet wide, and others only two, but you can put as many of them together as you like. By having a great many sections fastened together loosely by links and swivels, the harrow adapts itself nicely to uneven ground.

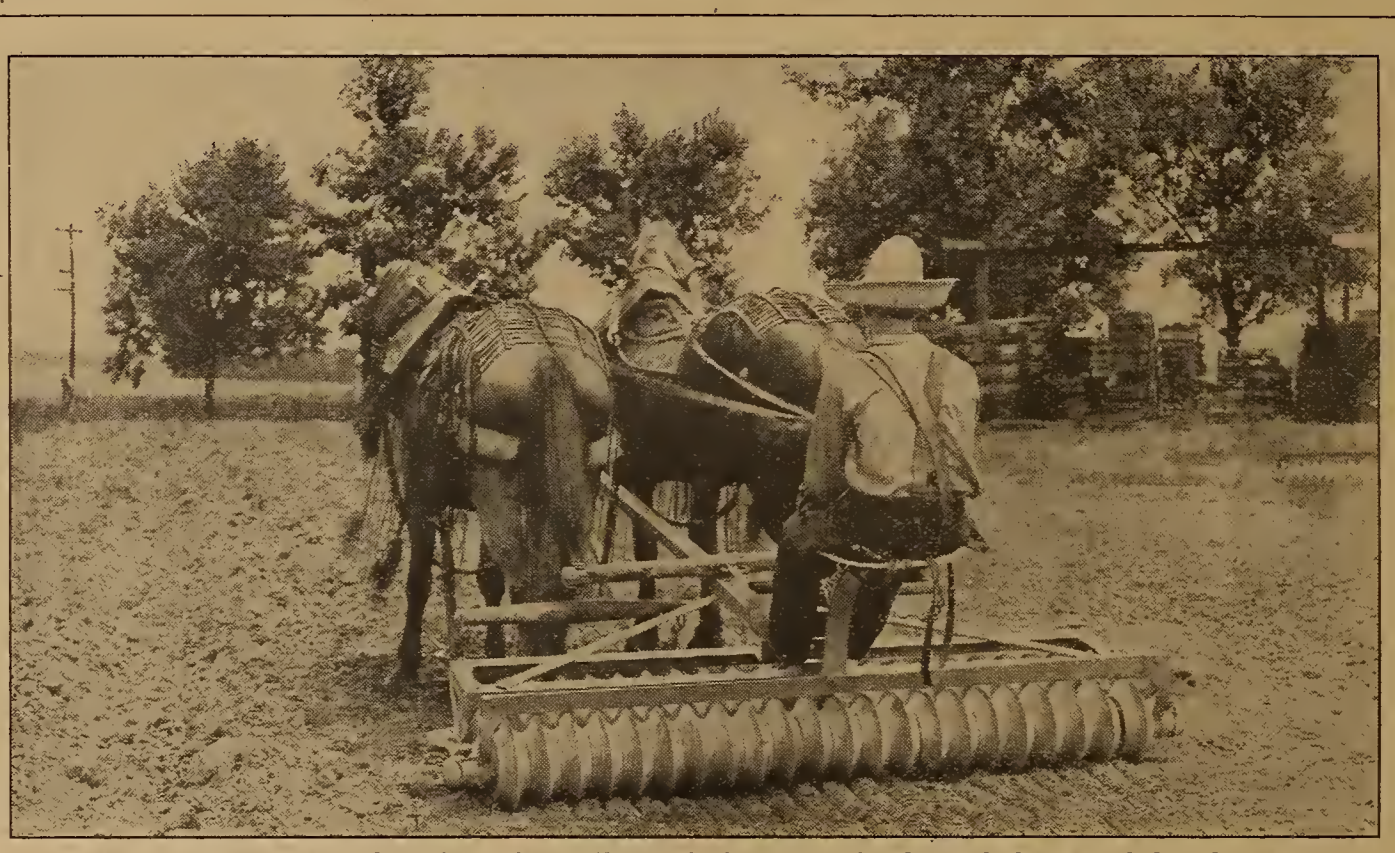
There are also combination harrows. For instance, one spring-tooth harrow has a row of heavy spike teeth across the back that can be set at any angle. Another is a riding spike-tooth harrow with a plank drag firmly attached. This is a good tool for mulching or finishing off a seed bed.

Another rather popular development is the closed-end harrow. This simply means that there is a strip of heavy metal connecting the ends of the main bars to prevent the harrow from catching onto obstructions. The enclosing strip is usually curved, so even if the side of the harrow should strike a tree or a person's foot no serious injury would be done.

An Ohio company has brought out a spring singletree that is aimed to prevent sore shoulders as well as broken harness when a harrow catches on a snag.

One of the best jobs of harrowing I have ever seen was done by a rotary harrow attached to a gang plow. This style of harrow consists of a series of disks strung on an axle three inches apart, each disk having six knives resembling heavy butcher knives.

If you desire further information about any implements mentioned in this article, or if you have a tillage problem you want help on, write the Machinery Editor, FARM AND FIRESIDE, Springfield, Ohio.



No seed bed, however smooth on the surface, will raise the best crops if underneath there are clods and air spaces neither of which will support rapid germination or plant growth. This rolling pulverizer crushes all lumps

Improve the Disk

Inventors Add Labor-Saving Devices

By C. O. REEDER

THE disk harrow continues to be a popnlar tool, and the common objection of heavy draft will doubtless disappear as tractors come into more general use. But even for the man who has but one team of light horses the use of a disk harrow is not impossible, for he can now get an 8-disk size cutting only four feet wide. Other sizes are 5, 6, 7, 8, 9, and 10 foot cuts, the 8 being a general favorite.

Tongue trucks have proved their value in saving horses from side-swiping of the tongue.

One difficulty in operating disk harrows, in the springtime especially, is the tendency for them to pick up trash and carry it along on the edge of the disks. This prevents proper penetration. One new disk harrow has an ingenious system of oscillating scrapers. Pressure on a foot pedal causes the scrapers to clean the whole face of disks, and you can lock the scraper at the outer edge so it will clean off all trash as soon as it touches the scraper. To meet the demand for combination implements so much desired by the farmer whose storage space is limited, one harrow manufacturer makes a separate rear-gang trailer for single-disk harrows.

About New Plows

What the Manufacturers are Doing

By L. S. MEREDITH

PLOW WORKS are fewer in number but immensely larger in size than they used to be. "It's one thing to make a plow but an entirely different proposition to sell it," one manufacturer said. This man was just a medium-sized manufacturer. "A concern has to be big enough," he went on, "so its selling expense will be proportionately low considering the price the purchaser pays. The crossroads blacksmith can no longer make as good a plow as a specially equipped plow works, nor can he sell them so cheaply."

One plow company has a complete ice plant of 30 tons' daily capacity, used for furnishing water at a uniform temperature for tempering plow steel. All sandpapering of handles and beams is done by special sandpapering machines which give not only smoothness but a high polish as well. The foundry of one large plow factory is 816 feet long, and in the pattern department there are 7,500 different patterns. In the early days of plow-making a good many plows were made to order, but nearly all the best-equipped concerns have plows in stock for practically every kind of soil, power, and personal preference.

One of the largest companies turns out a million extra shares annually for its plows already in use. It uses 300 tons of corundum annually for grinding, and 1,000 tons of oil and paint.

All of the large companies have extensive experimental grounds for testing new designs, and several have well-equipped farms run by practical farmers.

To Plow More Corn

Two-Row Cultivator Gains in Favor

By AMOS GRIDLEY

"A GOOD farmer can tell just by looking at a cultivator what kind of work it will do," one manufacturer said, "and if you don't have just what he wants he'll go somewhere else. Just now we are working on a new two-row cultivator. I guess nearly everyone knows you can't do as good work with a two-row cultivator as you can with a one-row machine, but you get along faster and we make 'two-rows' because people ask for them."

The preference for riding cultivators over walking cultivators continues to grow. A good man can do better work when riding than when walking, though I know some readers will dispute that statement. A certain farmer I know will not have a walking cultivator on the place because he can't get hired men who will work with them. In another locality where hired help is less independent, the owner of a large farm won't have a riding cultivator because he says his help goes to sleep and pays no attention to young corn plants accidentally covered up. "When walking, they'll stop and uncover it," he said, "bnt a riding cultivator makes a man indifferent."

Just now most of the improvements are toward lighter weight, better balance, dust-proof bearings, and increased durability. For instance, axles held in brackets, instead of being continuous with the arch, can be reversed when one end becomes worn, thus giving double service. In addition, new axles of this sort are cheap. Such an axle also makes possible a closed-end hub which is dust-proof, and one oiling will last a season if hard oil is used.

One cultivator has a very close hitch, which makes it easy to turn around short. Tongueless cultivators are still made, and are said to give good results with a steady team, but compared to a cultivator with a tongue they are harder to control when you want to do expert work.

Nearly all high-grade cultivators are equipped with balancing devices which take excess weight off the horses' necks, also with lifting springs on the shovel arms so they can be easily thrown out of the ground. Some have double-acting springs by means of which one spring keeps the other from raising the shovels too high.

Telescope axles give a tread anywhere from about 40 to 52 inches, so you can make the cultivator fit any ordinary width of planting. For use in stony or rough ground the spring-trip shovels are popular, and some of these are made so they spring back in place of their own accord after being tripped.

One new cultivator has a sunshade which catches the wind very easily, and a touch of the hand will move it forward or back. For cultivating east and west rows in the late afternoon this saves your eyes and the back of your neck. In most cultivators the shovel arms swing, and in others the shovel arms and the seat both swing. But one cultivator is now designed so that the wheels are pivoted to turn as an additional means of helping the shovels to dodge plants out of the row.

The question of attachments is one on which inventors differ considerably. Some believe in having just one tool for a certain job and another tool for a different job. But so many cultivating jobs are similar that you can often get more for your money by buying one combination cultivator, and you don't have so many machines to store. The machines I have already mentioned cost from about $15 to $31.50. But for $45 you can get a combination cultivator which is fitted with two sizes of cultivating disks, any kind of shovels you desire in addition to trip shovels. It has three main adjustments which adapt it for all kinds of work, and the shovels have an almost unlimited number of positions.

EW

Buying Planters

Farm Manager Tells About Corn Machines

By D. S. BURCH

"WHAT have you got? What'll it do? And what's the price? Those are my three questions for agents and dealers." An experienced farm manager was telling me how he bought his farm machinery. "I haven't time to spend a couple of hours with every agent or salesman who comes around. So without preliminaries I ask those questions and look as fierce as I can. There isn't much sentiment in buying farm machinery. It isn't like an automobile that you can charge up to pleasure.

"You see," he added, "I'm authorized to buy any machinery that'll pay out on this farm, but I'm held responsible for results. I've got to show returns in dollars and cents. Two years ago I picked up a $30 cultivator at a sale for $10, and thought I was saving the boss that much money. But he didn't see it that way at all. It needed some repairs which I didn't get around to make, and when corn plowing time came it wasn't ready. What he told me about fooling with run-down machinery wouldn't do to print. Since then I've found that it sometimes pays to throw a machine away, even if it isn't worn out, and get a new model that has some valuable improvement."

That's a little insight into modern farm management. Not everyone, of course, has the free hand to buy all the machinery he needs, even though it is sure to pay. But the principle holds even though you buy on a smaller scale. Good machinery investments are not hard to make, because most farm machinery pays some profit; farms usually are under-equipped. The difficult thing is to make the best possible investment. That means getting a piece of machinery that has first-class material in it and will do exactly the work you have for it. The two chief ways of buying machinery are by personal inspection and by catalogue. Nearly every good-sized concern issues catalogues telling about its goods. Well-written and clearly illustrated catalogues will usually tell you more about the fine points of construction than any but the very best salesmen.

In my own experience I have found that a catalogue can be relied on to tell all the good points about an implement, but to find the "nigger in the woodpile," if there is one, a person must get the opinion of someone who has used the machine. It seldom pays to buy anything in a rush.

Was the Hired Man to Blame?

FOR instance, some corn planters—excellent machines otherwise—have a number of detachable parts. One farmer I have in mind was ready to plant corn with his new planter when he found he needed three more links of chain to run a certain drive. He looked in the tool box, and the links weren't there. In a hot temper he went to town and 'bawled out' the implement man who sold him the planter.

When matters quieted down they found that one of the hired men on the farm had the links in his pocket. The planter did good work when it was finally started, but that didn't make it a good planter. The best corn planters, all things considered, are so made that all the parts are on the machine all the time.

Then, too, most everyone who has seen a corn planter tested has been surprised at the extreme accuracy of the drop.

"But why is it," one man asked me, "that when I get a planter home it doesn't plant as well as it dropped during the test?"

"An exhibition test doesn't show a thing," another man said. "It's all a frame-up; the corn they use is graded to size, and of course it drops evenly."

Here are the answers to these criticisms. Of course, graded corn helps, and when you can buy a good seed-corn grader for less than a dollar it is foolish to use anything but graded corn. You'll get a much better stand with it. But perhaps the most important thing to notice in a corn-planter test is the speed of the plates. Always make sure that the plates are revolving as fast as they do when a team is pulling the planter at the rate it does its regular work.

Nearly all planters have a variable drop by which the operator can change the drop so as to plant two, three, or four kernels in a hill without stopping the team

In a demonstration the planter may be run at only about half speed, and in such cases it naturally makes a good showing and cracks very few kernels. But that is not a real test. The plates should run at full speed to show what the planter will really do.

The relative merits of edge-drop versus round-drop planters have divided corn-planter users into two camps. The edge-drop advocates say that while kernels of corn vary a good deal in length, breadth, and shape they are nearly all the same thickness. Consequently the edge-drop plate is the most accurate.

Discard the Tips and Butts

THE flat-drop advocates reply that the holes in edge-drop plates are so much smaller that the plates must turn slowly in order to work well, and if you travel fast you lose in practice the theoretical advantage of accuracy.

One concern that has studied the matter carefully has adopted what it calls "oblique selection," by which the kernels slide over a dome-shaped hopper bottom and into the proper position in the plate. Several companies make both the edge-drop and the flat-drop planters. One concern has a convertible planter which uses either flat- or edge-drop plates.

Edge-drop planting requires graded corn, but the tips and butts should be discarded anyhow, because the middle kernels have the largest germs. Shellers that keep the corn on the butts and tips separate from the rest of the ear can now be had for $1.50.

Two new planters have easily detached runners. You can get them sharpened without taking the whole planter to town; or, if they are badly worn, you can put on new ones without much expense or loss. Several concerns furnish gauge shoes for the corn-planter runners. Some of these work like little toboggans and keep the runners at a uniform depth. Another kind of gauge shoe is rotary so as to work well in trash.

Just About Spuds

Seed Potato Cutters Lighten Work

By CHARLES L. CUTLER

THERE isn't much that's accidental in the way crops grow. Even the eyes of a potato, though apparently scattered at random, have a regular arrangement in the form of a spiral gradually increasing in size as you go from the seed end toward the stem end.

One modern potato cutter is designed to take advantage of this arrangement, and can be adjusted so the eyes come about in the middle of the seed section. At the same time the many small eyes at the seed end can be sliced off and discarded. A potato cutter embodying this principle and having a capacity of six bushels of cut seed per hour can be had for $6.

This home-made device for cutting seed potatoes consists of a bench with a knife inserted so that potatoes can be pushed against the edge of the blade

Both one-man and man-and-boy horse-drawn planters are on the market, each having its advantages. No one-man machine that I have ever seen will plant potatoes with as much accuracy as a planter where an extra man or boy watches the seed plate and makes corrections to prevent double hills or missed hills. On the other hand, a one-man planter gets the work done about ten per cent faster and saves labor, even though it wastes a small amount of seed. One good planter has a canvas hopper which has been found to prevent clogging, since the canvas is flexible like a sack. Another interesting planter has a corn-planting attachment so the potato grower who has a little corn to plant can do it with the same machine. The corn-planting device will also sow beans and peas, and the hopper is divided so you can sow alternate hills of corn and beans in the same row. There is also a fertilizer attachment for the same machine.

The best potato planters cost close to $100, and are adapted to farms where the potato acreage is 25 acres or more. With one of these machines and two good horses you can plant about five acres a day.

Potato sorters now do away with the laborious hand work of picking out the small and irregular potatoes. A potato sorter consists of a framework around which is an endless chain of horizontal plates having forked openings. It looks something like a small tread power. You turn a crank and the potatoes automatically divide themselves into three grades. It does not sort out decayed or diseased potatoes, but as they are all in sight that part of the selection can be done by hand.

The Small Drill

Five-Disk Machine "Makes Good"

By M. L. DRIVER

DRILLING in a crop usually calls up in the mind a picture of a big field and a wide drill drawn by at least two husky horses. That's the quickest way, but in these days of diversified crops we mustn't forget that there is a place for small drills as well, and lately several excellent drills have been perfected for sowing various crops between rows of standing corn, in orchards, and other places where large machines cannot successfully operate.

For the man who sows small acreages of wheat, oats, cowpeas, and beans the one-horse five-disk drill makes a good machine. A grass seed and fertilizer attachment can be had for such a drill, and as it sows from 24 to 34 inches wide it is serviceable for fields up to about ten acres. This kind of a drill is controlled by handles, and the driver walks behind it as in the case of a walking cultivator.

Power for operating the force feed is secured from the single wheel in front. A three-row drill is quite popular for still smaller fields, while for gardens most of the drills are operated by hand. A promising little machine that will sow any kind or size of seed from Lima beans down to onion seed is now on the market, and the test I witnessed was very successful. Onion seed is very small—over 10,000 seeds to the ounce. This machine should interest gardeners and truck growers. The man-power one-row size costs $11.50, and with a fertilizer attachment, $15.

Such a tool has the advantage of sowing uniformly, preventing waste of seed, but, most of all, saving labor. To plant onion seed by hand is always a tedious job because the seeds are so small. The inventor of this machine said that one user who has a hand machine has sowed 14,000 pounds of onion seed with it. This means over two and a quarter billion seeds—an almost endless task for one man to do by hand, and he wouldn't do it so well.

Regulate Depth According to Soil

THIS is only one of a number of small drills for garden use. Most of them use gears to operate the seeding device. But one company now has a new small seeder that has nothing but slow-motion cranks and pitmans—not a cogwheel or gear or chain on the whole machine. This has some advantages in working among weeds, cotton, and other standing crops, but of course is no better than geared machines for the ordinary clean seed bed. With a drill you can also regulate the depth of seeding. Sandy or dry soils require deeper seeding than a moist loam or clay.

The principal advantage of drilling over broadcasting is the better and more uniform crop obtained in nearly all cases. A government crop expert, in speaking of seeding oats says: "Drilling gives a more even stand than broadcast seeding, for all the seed is covered to about the same depth. In sowing broadcast, some of the seed may not be covered at all, and some may be covered too deeply. Germination is better from drilled seed, and the growth is more uniform throughout the season. In numerous tests at the experiment stations, drilled oats have outyielded oats sown broadcast, by several bushels to the acre."

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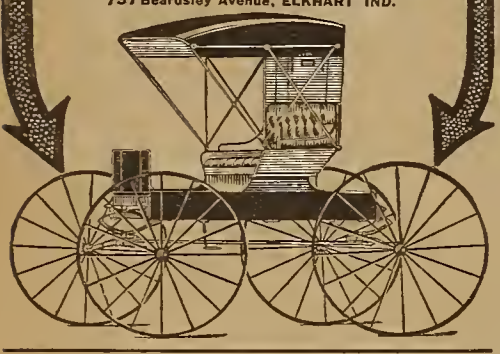
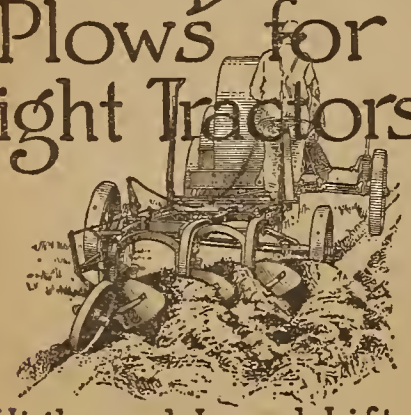


JOHN DEERE Plows for Light Tractors



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To Get a Good Stand

Germination Test Shows Up Poor Seed Corn

By B. F. W. THORPE

WE HAVE been nibbling on this seed-corn question for generations, but have been deplorably slow in getting to the root of the matter and giving King Corn the square deal he deserves.

Last year was a record breaker as regards difficulty in making sure of well-matured, growable seed corn for this year's use. Not only is this true of the more Northern corn-growing States, but various parts of the corn belt face the same situation in lesser degree. The unusually cool and moist season resulted in much corn being sappy and weak-germed, even when apparently well developed and matured.

As a nation of corn growers we have never yet come to a full realization of what a financial calamity poor seed corn is. No one expects to make good in the business of raising cattle, horses, sheep, swine, or poultry these days by making use of any kind of scrub breeding stock. Instead we give constant thought and study to the selection of our breeding animals, and consider money spent for betterment of breeding stock to be a gilt-edged investment.

When confronted with the results of poor seed in our planted field, we are prone to think a few skips and breaks in the rows are not worth noticing. But note for a moment what poor seed really means. Examination of more than 5,000 cornfields in 33 counties of Iowa during the past eight years has shown an average of only 71.7 per cent of a full stand of corn. The best stands of these fields produced 12 bushels more corn to the acre than did the average of the whole number of fields examined. On this basis the corn growers using the poor seed could have made money by paying $80 a bushel for seed like that which produced the best stand.

The old idea so prevalent about corn "running out" has been fully exploded by continued practical tests. Corn will not deteriorate by continuous growing on the same farm unless the grower "runs it out" by a wrong system of culture, such as continuing the growing of corn after corn, or by starving the plants by a lack of certain food requirements, or by using immature and poor-quality seed.

Untested Seed Dangerous

The worst knock-out blow that has been staggering King Corn is the practice of selecting corn from the crib and planting it without a germination test. Many times the ears thus selected for seed were produced on scrubby, poor types of corn plants which, because of an unusually favorable chance, produced ears that appeared good enough for seed. When such seed is used, there is little likelihood of getting anything but non-uniform, inferior corn.

After making a decision to build up a better strain of corn of our own, the next move is to decide on the type of corn we want to raise. Observation and continued experiments show that the best yield of good-quality corn is produced on corn plants of medium height for the variety, quite stocky at the base, and having a full, heavy leafage. The ear should be of good length but not overgrown, and be borne on shanks sufficiently slender so that when mature they gradually bend over and better shed the rain.

Corn plants filling this description naturally have a strong, wide-spread root system, and will be provided with plenty of anchorage roots found above ground.

As a concrete example of how to go about corn improvement, let us suppose a case. John Smith, a progressive, has become dissatisfied with the strain of corn he has been growing, and has decided to develop something better. He therefore begins to study corn in his neighbor's fields, in bulletins, and all the corn literature he can lay hands on. He learns of several growers of corn in an adjoining county that has made record yields, and he spends a day or two visiting their farms and examining their different types of corn. This examination is made when the corn is just beginning to ripen.

Uses Home-Grown Seed

After becoming better acquainted with corn of different varieties he settles on a type that he considers best adapted to his condition. He decides wisely that his neighbor who lives only a mile or two away, located on the same ridge as his own farm, is his best source of foundation seed stock.

This neighbor has been doing unconscious corn-breeding for years, until he now has corn of a type, not perfect to be sure, but in the main well suited to his particular conditions.

For a consideration he obtains permission to go through this neighbor's cornfield, before the corn is harvested, to select a bushel of seed ears for foundation stock.

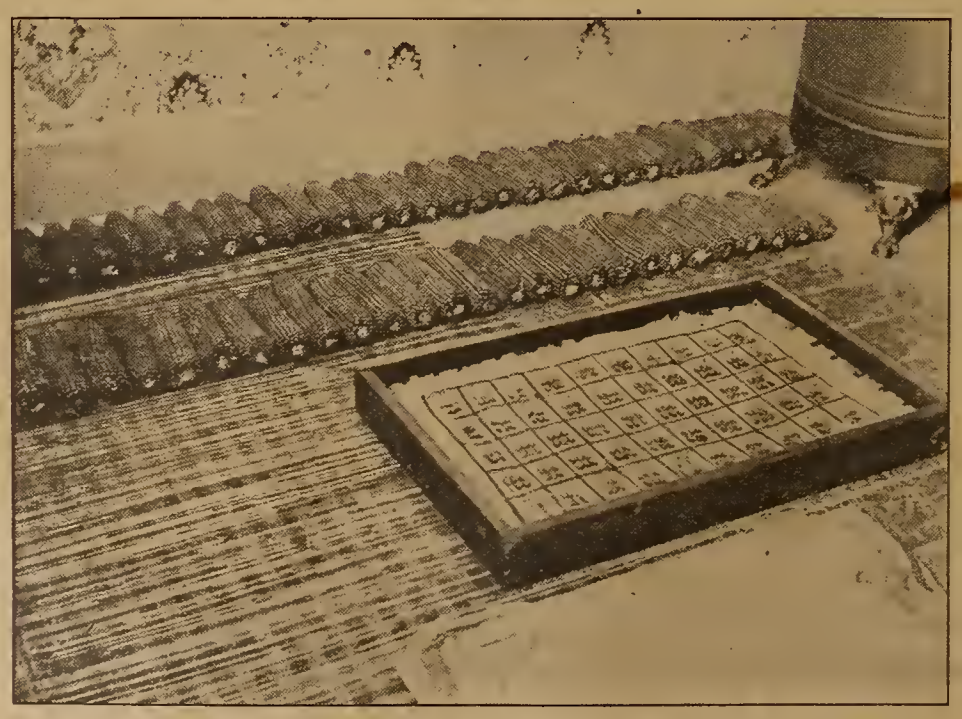
This seed he stores in an airy attic free from danger of freezing. Some weeks before time for planting he decides he ought to know just what per cent of his bushel of seed corn will make a strong germination, and proceeds to take several sample kernels from different parts of each ear. The ears are all numbered, and the kernels from each ear are placed in squares of the seed tester numbered to correspond to the ear from which taken.

From the result of these tests Mr. Smiths learns exactly which ears are strongest in vitality and which, if any, should be rejected from his field seed-corn plot.

While selecting the sample kernels for testing, Mr. Smith is struck with the differences in length of the kernels and smaller cob and shank in some ears than in others. He decides he can still further improve his new corn, which is good but not sufficiently uniform in yield to suit him.

To make a start in this direction he decides to plant perhaps twenty of the best ears in rows, a part of each to a row. When the corn is harvested each of these test rows will be shocked or picked separately, and the husked corn will be accurately weighed.

We will say that Mr. Smith finds that five of the marked rows yield at the rate of 100 bushels per acre, five other rows, 80 bushels, and the remaining ten rows from 40 to 60 bushels per acre. Naturally he will save for the foundation stock of his breeding plot the ears which supplied seed for the ten rows first enumerated.



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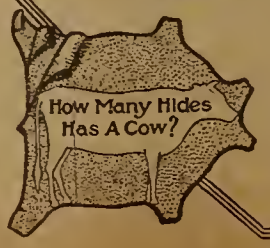
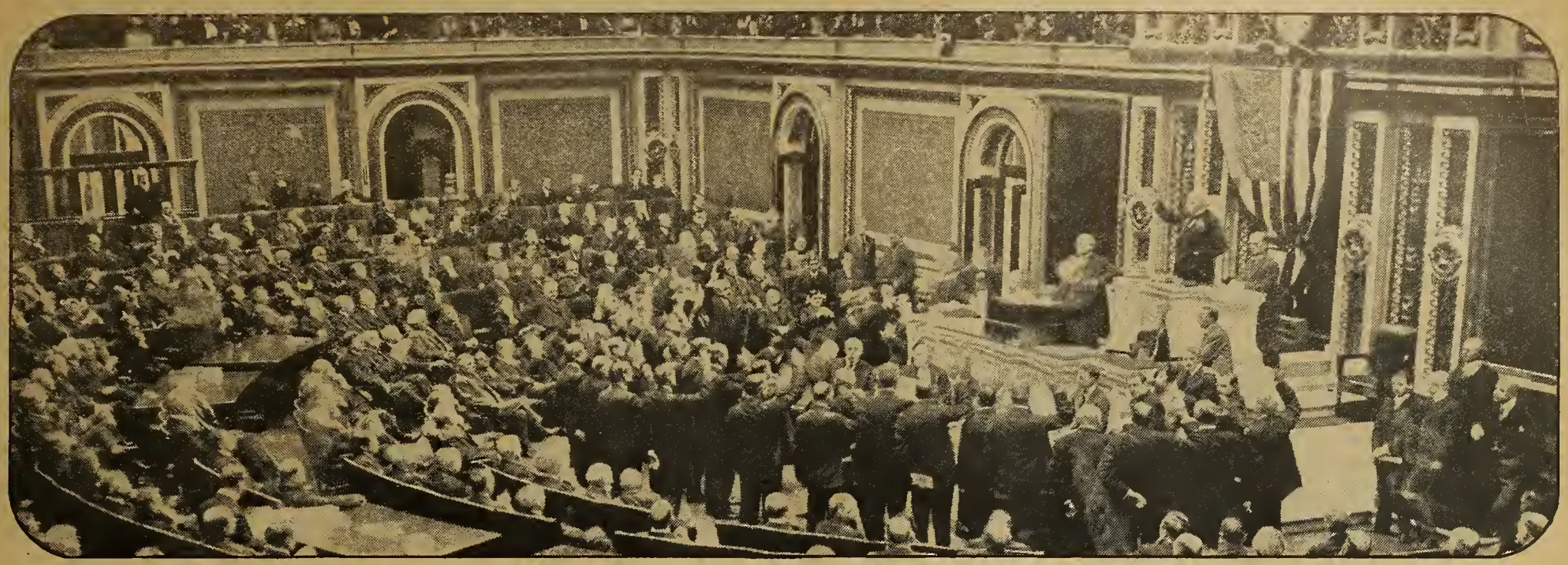


Craftsman Fabrikoid, the artistic upholstery material for furniture and home decoration is sold by leading department stores.

Farm and Congress



THE Sixty-Fourth Congress was opened before the usual crowd of spectators, who filled every seat in the gallery long before the session opened. It was just sixty-eight years ago that Lincoln and Johnson, later to become Presidents of the United States, entered Congress and passed through the same scenes at the "swearing-in" of the new members. This photograph shows Speaker Clark behind the Speaker's stand, with arm uplifted, swearing in the new members of Congress. Among the members who commanded popular attention were Representatives Schall of Minnesota, the only blind member of the House, and Meyer London, the only Socialist member.

TO MAKE this foundatiou square-cornered these men are using an old formula which we all learned in school, that the square root of the sum of the squares of the base and altitude of a right-angle triangle equals the hypotenuse. The men have a 10-foot pole. They place one end of it on the twine eight feet from the corner and the other end six feet from the corner. This makes a right-angle triangle.

THIS is part of a train load of manure that is being shipped from Chicago to Hoopeston, Illinois, a distance of 100 miles. The Hoopeston farmers place high value on the fertilizing and physical properties of manure, and the plan is profitable or they wouldn't bear the expense of shipping the manure 100 miles and then hauling it to their farms.

HERE is the Osceola County Michigan boys' potato-growing club which is doing much to raise the standard of the potato industry in that State. The club consists of thirty-one members. They are en route to the convention of the National and Michigan State Potato Growers' Association at Grand Rapids, Michigan. Howard La France, champion potato grower of the world under fifteen years of age, is the seventh boy from the right. The cross marks his position. .He raised 210 bushels and 22½ pounds of potatoes on one-half acre. During 1915 the average net profit for the best ten growers of the club was $50.92. It cost them 16.5 cents to produce a bushel of potatoes.

E-W

FARM and FIRESIDE
THE NATIONAL FARM PAPER
Published every other Saturday by
The Crowell Publishing Company
Springfield, Ohio
Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago.
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter.

Subscription Price
One year (26 numbers), fifty cents. Three years, one dollar. Extra postage for Canada, twenty-five cents per year.

About Advertising
Farm and Fireside guarantees that its advertisers are responsible and honest people, and that its subscribers will receive fair and square treatment.
Advertising rates and regulations furnished upon request.

March 11, 1916

Public Architects

DO NOT scoff at the idea of architects' services in designing farm buildings, even such humble structures as hen houses, hog houses, and corncribs. There is a best way to make them all. To be sure, this is not an attractive field for the competent private architect who has gone through an expensive training. He finds his services most in demand by those who build houses costing from $4,000 upward.

And even though such a man should design a barn in his spare time, he would perhaps be so unfamiliar with farm work that his services in that line would not be of the highest class. On the other hand, the average man who tries to plan his own buildings without some expert help runs into a maze of troubles that cost him extra money, and may perhaps even spoil his building.

Fortunately, there are architects to the public whose help is both good and inexpensive. The Dairy Division of the U. S. Department of Agriculture has for eight years employed a man whose duties have been to design dairies, ice houses, stanchions, and related subjects. The Office of Farm Management has been active also along lines pertaining to the convenience, size, and location of various other farm structures. These men have made a specialty of farm buildings, and it is doubtful whether a private architect could give better service. Some commercial concerns also employ competent architects to advise those who use their particular products, such as lumber, hay tracks, roofing, and what not. Many of the best plans are in the form of pamphlets, and can be had for the asking or for a very small sum, much less than the real worth of the service.

Unless one has some unusual requirement, he can generally find a plan that will suit him from among the vast number produced. The best farm architects at the present time are thus at the beck and call of the public.

Money Thrown Away

THIS is the confession of a banker who owns a farm. The farm used to lose money for him; it makes money now. "I had plenty of money to improve the farm," he said, "and put fifteen tons of manure per acre on some of the fields. I had the best equipment money would buy, and always paid cash whenever I could get the advantage of a cash discount. But I kept shooting my money away. My method of farming was a one-crop system—cotton. This is good enough evidence that rural credits will not solve all our problems. At least, it didn't do me any good except to help me to waste more money."

Finally, with the aid of a government demonstration expert, this man stopped soil-washing, diversified his crops, and began to get returns from his farm. While it is perfectly obvious that any effective system of rural credits must depend on wise methods of farming that are fundamentally profitable, this incident is rather striking.

If a farm is losing money because of bad management, easy loans will simply run the borrower into debt. On the other hand, they will multiply the returns from good management. So the whole matter depends in the end on our knowledge of what to raise and how to do it.

Another Farm Product

WHO has stopped to figure out and realize that trained army officers constitute one of the important crops produced by the American farm?

That's what former Secretary of War Garrison says.

The land-grant colleges—agricultural colleges, that is—of the country graduate about 5,000 students annually. They are required to take a course in military instruction in these institutions; and the War Secretary declares that the great majority of these 5,000 are turned out so well trained that with a very short intensive training they would make excellent commissioned officers of the lower grades.

Most impressive is the statement that these agricultural colleges turn out, year by year, more men with training to make good army officers than all the other training instrumentalities in the country.

There certainly seems to be nothing that the American farm can't produce, if put to it, and of top-notch quality.

Not a "happy go lucky" school, says Mrs. P. O. B. of Washington, in her letter under this picture, but a happy school just the same. Her letter tells why

Our Letter Box

Tells About Fine School

DEAR EDITOR: I notice an article by Frank Orr about rural schools. I have a few words I would like to say about our country schools. I live five miles from Lynden, Washington, and three-fourths mile from Delta School. A superintendent visits us just about two times during a term, and the call is from fifteen to thirty minutes' duration, and the children are worse at these periods than at any other time. Two years ago our schoolhouse was about the worst-looking building in the county—no yard, just mud; and no flowers or shrubs of any kind. There was a rather poor attendance, and no interest taken in the school by the parents. In fact, it was a "happy go lucky" school, and our boys and girls were learning everything but what they should.

About that time we hired a new teacher that believed in order both in and out of school, and she organized a school club and gave the little credit marks for special good behavior, and had a roll of honor printed each week in the Lynden paper, with the names of those neither tardy nor absent, and it was only a few weeks till it was hard to find a better behaved school, and a vulgar word on the school grounds meant dropping the name from the roll of honor that week. It worked like magic. About this time the school directors decided Delta needed a porch instead of just a step, and they built on a fine one, and graded the schoolyard up, and installed a drinking fountain and furnished a fresh supply of linen towels, and, best of all, made the schoolhouse sanitary by calcimining and painting, and added a new big heating stove with a jacket around it. After two years of this kind of school the parents took an interest in visiting it.

I am sending you a photo of our schoolhouse and school so you can see for yourself that all are happy. I had to break up a ball game and a hop scotch game to get the picture.

MRS. P. O. B., Washington.

Old-Age Pension Bill

DEAR EDITOR: On January 5th, Congressman Sherwood introduced in the House an old-age pension bill which provides that after December 25, 1916, all dependent persons of the age of sixty-five or more who have an annual income of less than $200, and who are American citizens, and who have not been found guilty of any crime, and who are not receiving any pension, shall be entitled to $2 per week, payable quarterly.

Now let FARM AND FIRESIDE readers who are friendly to these old persons get busy and petition the House and Senate to pass this bill.

D. PIFER, Alanson, Michigan.

Comes Back at Kitchen

EDITOR FARM AND FIRESIDE: Allow me to say a few words in regard to the house of A. O. Alexander, the picture and plans of which you published in FARM AND FIRESIDE for January 29th. I see that the butler's pantry is mentioned as a saver of many steps. Now, I should say that it makes more, or is the cause of more, steps since all the food must be carried through the pantry or through the library. Besides, the kitchen has only one window and no outside door. It must be pretty warm in there on a hot summer day, and very poor light.

My wife wants plenty of light and ventilation in her kitchen. She says if we build a new home she wants windows on three sides of the kitchen. Our kitchen now has light on two sides. We also have a butler's pantry which opens both into the dining-room and kitchen, but we can go directly into the dining-room from the kitchen, without going through the pantry.

We also get our wood direct from the shed into the kitchen without going through any other room, which saves a lot of steps. Of course, everybody to his own notion, but Mr. Alexander's plan of a house does not appeal to me for convenience. F. J. HACKEBORN, Michigan.

From Hired Man's Wife

EDITOR FARM AND FIRESIDE: I have read a number of articles on farm labor in the different farm papers that come to our house, but they are all from the employers' viewpoint and are not fair to the so-called hired man. In the three different States where I have lived the hired man gets up at four o'clock in the morning from the first of March until the corn is husked in the fall. In most cases he has the milking to do, which, together with the feeding, takes from an hour to an hour an a half. He is in the field before six o'clock in the morning, leaves the field at 11:15 A. M. and by the time he reaches the barn and waters and feeds his horses it is noon and time for dinner. He starts back to the field at 1 P. M. and leaves it at 6 P. M. By the time he is through with his work it is seven o'clock, and on lots of farms it is later than that.

We have lived in both the city and the country and will take the city every time for the hired man. The farm is the place for anyone that can farm for himself, but not for the man who works by the month. In the city my husband left home for his work at 6:30 A. M. and was home by 6:15 P. M. at night. He made $52 per month, and we saved enough out of that to buy a little home. They claim that in the country living is cheaper. It is not for the hired man. They furnish a little piece of ground for a garden, oftentimes not as large as a city lot. Sometimes they furnish a cow, but it has been our luck to get a cow giving about two quarts at a milking. We have our own horse, otherwise would not live in the country at all. A hired man near here said that as he didn't have any horse he had gone hungry more than once because they couldn't get groceries brought out from town.

As for dealing with the "honest farmer," I would just as soon trust the city merchant. Ask any farmer to sell you lard and he will say, "Well, I will sell it to you for what you would have to give in town." If it were 12 cents in town he would haul it to town and take 9 or 10 cents for it. If he would say 11 cents, he would be gaining, and the purchaser would gain too.

Two years ago we drove about ten miles into the country, thinking we could get apples cheaper than in town. We stopped at a farmhouse and asked the price of their apples. "Seventy-five cents a bushel," was the reply. We could get the same kind of apples off the cars in the city for 40 cents a bushel. I am not complaining for myself, as I can go back to the city, but there are thousands that have no place to go and have no horse to go anywhere. I suppose there are exceptional employers, but we have never found them. Just one thing more: The city employer always pays at the end of the week or month, but in the country you have to ask for your pay if you get any. K. M. P., Illinois.

First on Sudan Grass

EDITOR FARM AND FIRESIDE: I think I was the first that ever planted Sudan grass in the United States. About forty odd years ago the U. S. Government imported camels into the country for the use of the army in Arizona and the Southwest. They also brought over a caretaker from Africa. He was from Sudan, and we knew him as Hi Jolly. He died some ten years ago in New Mexico. They also had a large amount of feed sent with the camels, and when it was out Hi Jolly was always complaining because he had brought so little. This feed had been packed in large canvas sacks, and as there were several large bundles of these empty sacks we got them out to see if we could not get a little hay results. No hay, but about a half bushel of chaff and seed. I proposed we plant it, and was ridiculed by all the other packers. They called me the farmer, and worse; but Hi Jolly said, "Sure we will plant it, for it will grow here or anywhere that it's not too cold."

Well, we planted it, and it was nearly four feet high when I was ordered to Ft. Lowell, near where the town of Tucson now is. I never saw it afterwards, but know from others that it did well. There was about three-fourths of an acre.

In 1905 I was in the Date Creek Valley, and saw some of this same grass growing wild, miles below where we had planted it. I secured a few heads of seed, and was raising it in Arizona in 1910. I was in Texas and got two ounces of seed from the experiment station, not knowing that it was the same I already had from Date Creek originally, but after carefully comparing them I find they are one and the same. The first seed imported by the United States was in 1909, but Sudan grass was growing here before that time.

E. B. HIGGINS, California.

Bits of Good Humor

Spare That Child!

A negro mammy had a family of boys so well behaved that one day her mistress asked:

"Sally, how did you raise your boys so well?"

"Ah'll tell you, missus," answered Sally, "Ah raise' dem boys with a barrel stave, an' Ah raise' 'em frequent."

Probably Not

"They say George has brain fever."

"Fat chance. Can an angleworm have water on the knee?"

Safety First!

WILLIE—"Ma, may I have Tommy Wilson over to our house to play, Saturday?"

MOTHER—"No, you make altogether too much noise. You'd better go over to his house and play.'"

Already Gone

"What's the matter, Bobbie?"

"Please, Auntie, I don't like my cake."

"Well, dear, don't eat it."

"But, Auntie, I have eaten it."

Other Things Needed

VISITOR—"Well, Robert, how do you like your new little sister?"

ROBERT—"Oh, she's all right, I guess; but there are lots of things we needed worse."

All Gone

"Don't cry, Willie! Grandpa will play Indian with you."

"B-but you won't do any good. Y-you're scalped already."

EW

PAIGE

The Standard of Value and Quality

The Best Quality is the Best Economy

The price of the seven-passenger Fairfield "Six-46" is $1295.

We decided upon that price simply because we found it was the lowest possible price for which we can manufacture, sell and guarantee genuine Paige Quality in a seven-passenger six-cylinder car. That, you know, is Supreme and Unchallenged Quality.

Because $1295 is the lowest possible price for which we can manufacture and sell a car of the beauty, sturdiness, luxurious comfort and elegant equipment of the Fairfield "Six-46"—a car of such tremendous POWER, flexibility and unfailing willingness to "go through" any road conditions traversable by a motor car.

Because $1295 is the lowest possible price for which we can sell such a nationally endorsed car with Paige Prestige, Paige National Confidence and the Paige-Detroit Motor Car Company behind it.

That price—$1295—represents, we believe, the maximum of luxury, service, safety and economy in a seven-passenger Six.

What applies to the Fairfield also applies to the five-passenger Fleetwood "Six-38" ($1050).

We don't Guess that Paige Cars will "Stand Up." WE KNOW IT. And the American people KNOW it.

We will not consent to risk Paige reputation by trying any radical and purely experimental theories in Paige cars. We insist that a season's driving is the proof that any engineering innovation is practical.

Paige Cars are modern to the minute, but every Paige Feature has been proved scientifically sound.

Paige Cars are produced by EVOLUTION—not REVOLUTION.

Do you believe an experimental motor car is a sound investment?

One more point as to Paige prices—$1295 for the Fairfield and $1050 for the Fleetwood. Look farther than the purchase price when you buy your motor car. Look ahead and figure what your operating cost and your repair bills will be.

Look ahead and figure what your car will be worth at the end of a year's driving. Look around you and see how many of your friends began by buying cheaper cars and now realize that only Quality is real economy.

For your own protection—a Paige.

Seven-Passenger Fairfield "Six-46"—$1295.

Five-Passenger Fleetwood "Six-38"—$1050.

N. B. The cost of labor and materials has increased enormously. How long we shall be able to keep Paige Prices so low we cannot prophesy. Further, the demand for Paige cars is already overwhelming. For your own protection we urge you to order NOW.

Paige-Detroit Motor Car Company

238 McKinstry Avenue Detroit, Michigan

DODGE BROTHERS MOTOR CAR

Consult the impression uppermost in your mind and you will find that you think of this car as very carefully and conscientiously made.

People think of the car in this light because of their high opinion of Dodge Brothers as manufacturers.

And that good opinion is justified by the facts, and by the performance of the car.

For example, 22,500 machining operations are involved in the manufacture of the car.

A great many of these parts are machined to an accuracy of one-half of a thousandth of an inch.

At least three processes used in Dodge Brothers' factory are distinctively exclusive.

Scientific manufacturing accuracy reduces the friction of moving parts to the smallest degree, and a greater proportion of power is available for driving the car.

The use of forged and pressed steel parts instead of heavier castings reduces the weight of the chassis; and the all-steel body is lighter than the usual forms of construction.

The all-steel body also makes possible a lustrous finish of enamel which remains undimmed for a long period.

This special enamel is baked on the steel at a high temperature after each application.

The result is a fast glossy finish of a peculiar elasticity which renders it practically impervious to wear or even ordinary damage.

Dodge Brothers dealers frankly admit that their task has been made easy for them by the behavior of the car, and the things owners have said about it.

It is literally true, as you have probably discovered in your own locality, that the owners of the car are its most enthusiastic salesmen.

They insist in the most emphatic way on the high quality of its performance.

On almost every road in the country, its sturdiness and steadiness and unusual comfort have been fully demonstrated.

Steep hills, desert sand, rough roads or mud roads have held no terror for it.

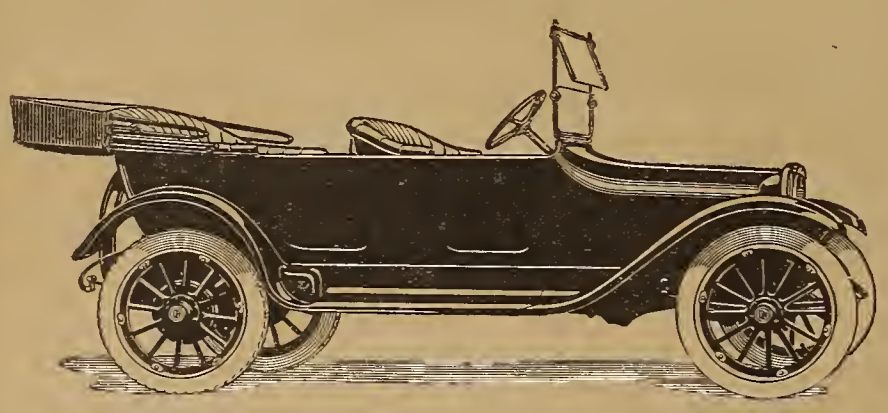
It has done everything it has been asked to do, and many things that have been called remarkable.

It has become known as a car of exceptional economy, not in gasoline alone, nor in tires alone, but in both.

It will pay you to visit the nearest dealer and examine this car

The tire mileage is unusually high

The price of the Touring Car or Roadster, complete, is $785 (f. o. b. Detroit)



DODGE BROTHERS, DETROIT

You Can Save Your Old Stove

Easy to Apply

By Relining it With

Plastic Stove Lining

"Better than any iron stove lining I ever had." C. J. Gibson, Arnold Park, Iowa

If you have an old stove that don't heat as it should, if the fire box is warped or cracked, don't throw it away—don't waste money on a new iron lining which won't fit and soon burns out again. Save your stove—save money—make it as good as new by using Plastic Stove Lining. Costs you nothing if it fails.

Comes in Soft, Pliable Putty-like Bricks Which Harden in the Fire

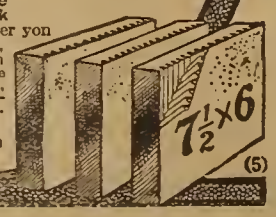
You simply take off the stove lids and press these soft fire bricks against the side and end of your old fire box—cut and bend them like putty to fit your stove. You can't fail to do the job right and in just a few seconds you will have the best lining you ever saw. Each brick has a corrugated paper coat on the side next to the fire which burns off when the fire starts and the lining hardens and hugs the iron closely. It works like magic. It's so simple, so satisfactory, so inexpensive and durable. Ashes can't get back of it. Line your old stove with Plasto-Lining and it will heat, cook and bake like new—use less fuel, too. Well known and well tried. Proved to outlast iron or any other lining.

Send No Money—We Take All Risk

Don't send a cent of money. Just write tell us whether you want 3 or 4 bricks (each 7½x6 in.) enough for one stove, and we will send them to you at once by express. When package arrives pay only express charges and reline your old stove with Plastic Stove Lining. Try them 30 days then if pleased, send $1.25 for 3 bricks or $1.50 for 4 bricks. If not fully satisfied no charge will be made. You take no risk whatever.

PLASTIC STOVE LINING CO.

1352 W. 35th Street, Chicago



Please Name Your Express When Ordering

(5)

Farm-Made Electricity

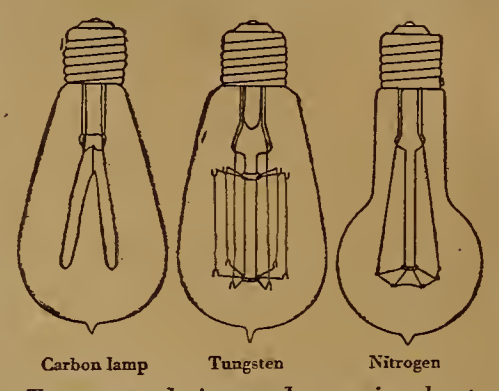
What Small Home Generating Plants Will Do

By B. D. STOCKWELL

"ELECTRICITY is a fine thing for the rich man, but if you go mentioning it to a regular farmer he'll laugh at you." That's what a so-called "regular farmer" said when I started to talk with him about farm electrical outfits. Then he continued: "If I could get current from a town or off a traction line, that would be a different matter; but you can't expect a farmer to make electricity besides all the other things he's supposed to do. Let's see. He's expected to understand crops, live stock, soils, machinery, bookkeeping, and politics. Now you want him to be an electrician."

But after this man knew some facts about modern electric systems he was neither so cocksure nor so abusively sarcastic. Besides, there are other "regular farmers" who are not so opposed to being "electricians."

"I really need electricity, and then I'd have a good farm," said a serious-minded young farmer who makes a special point of having things handy for his wife. "If we had electricity it would shorten my wife's work by one third, and my own work nearly as much. Take ironing, for instance. In summer she dislikes to have the coal stove going, and our oil stove is too slow a heater for ironing, so the work takes nearly twice as long. An electric iron would be dandy for her. If I had electric lights in the barn I could save hours in doing chores at night. And in hot weather I could mow away my hay in the evening when it's cool."



Tungsten and nitrogen lamps give about three times as much light as a carbon lamp, with the same current

Let me tell you about a visit to a factory that makes electrical outfits for farms. I went into a good-sized room in which the only familiar farm objects were a cream separator and a barrel churn. On one wall, occupying a space as large as a billboard, was a plan of a well-equipped farm with electric bulbs where lights would naturally be handy. There were lights in every room in the house, two in the stable, two in the hay-mow, one in the milk house, one in the hen house, and several over various driveways, so a person could see his way in at night.

At one end of the room there was a galvanized tank about four and one-half feet high and two feet in diameter. To it was attached some piping and a small pump belted to an electric motor. The expert in charge explained that this was an automatic system for supplying any farm building with running water. He opened a faucet, and water came out at a rate that would fill a bucket in about half a minute. Up to this time there had been no mechanical sound of any kind. But in about two minutes after the water had been turned on I heard a little click, and the electric pump began to work, making a noise about as loud as a sewing machine.

There was a gauge on the tank which showed the air pressure. The pointer of this gauge stood at 25 before any water had been drawn, and at 18 when the pump started up. The pump continued to run till the pressure went up to 32, and then stopped of its own accord. This meant that there was air in the top of the tank, and that this air was kept under pressure ranging from 18 to 32 pounds per square inch. This is enough pressure to force water anywhere in the average three-story building.

Fresher Water with this System

I was already familiar with air-pressure water systems that are pumped by hand, and the tank of the electric system seemed so small by comparison that I asked whether it was large enough for a house and barn supply.

"With the hand-pump system," the expert explained, "you have to store enough water to last a whole day, or as often as you care to pump it, so you need a big tank. But here the electric motor pumps in more water from the well as fast as it is needed, so there would be no advantage in having a large tank. A small tank is really better because your water is fresher."

I knew that a hand-operated system with a galvanized tank cost about $60, so was rather surprised to learn that the one just described sells at only $75 complete.

The current in this case came from 16 storage batteries that looked about as inert as jam jars on a pantry shelf. But their power is surprising: they are strong enough to run a ½-horsepower motor. The expert went over to the churn and pulled a switch. The churn started up immediately at the proper speed. Then he turned on the vacuum cleaner. It was made mostly of aluminum, and seemed to weigh about five pounds. A small revolving brush in the bottom loosens the dirt in the carpet or object to be cleaned and an electric motor in the base of the cleaner creates a suction that draws up the dirt and forces it into a sack attached to the handle.

Then I took a look at the generator. It was almost entirely enclosed and about as big as a three-horsepower stationary engine.

"We don't have to crank it," he explained, as he pressed a switch and it started up. "It works about like an electric starter on an automobile. The batteries start the engine, and then the engine charges the batteries by means of the dynamo. That's really all you need to make electricity anywhere—some kind of power and a dynamo.

In this particular outfit the engine and dynamo were mounted on the same main shaft, so it was a compact outfit. There wasn't even a switchboard, and the few indicators needed were mounted right on the generator itself.

The chief difference between the electricity furnished by this kind of a system and that from a large power house is the voltage. Voltage simply means the amount of "kick" in the current. The standard for most cities is 110 volts. This is strong enough to give a good strong shock, and that high a voltage is needed to carry the current over a large city.

Run Generator Twice a Week

The electric outfit I have described furnishes a 30-volt current, which will carry well on stretches of wire up to about a third of a mile. A 30-volt current is not strong enough to give a shock; in fact, I put my fingers on the two terminals of the dynamo while it was running and couldn't feel the current.

Electricity of low voltage is also much easier on the lamps, the wiring, and equipment in general. A tungsten lamp of 20 candlepower costs about 30 cents, and with a 30-volt current may last as long as five years. With a 110-volt current a similar lamp may burn out in a year. Nitrogen bulbs are a further improvement over tungsten lamps, as they use about four fifths as much current for the same candlepower.

"But isn't a 30-volt current such a new departure in electric lighting," I asked, "that you can't get motors, flat irons, and other equipment for it?"

"That was true two or three years ago," was the answer, "but it is no longer the case. Equipment using 30 volts is now almost as standard as 110-volt goods."

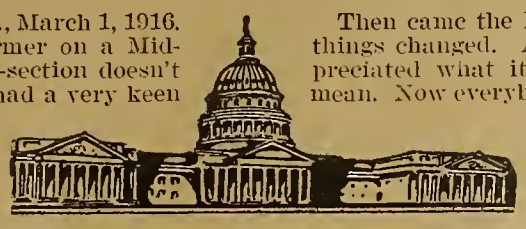
While voltage is the "kick" in the current, its real strength is measured by amperes, or the volume of the current. Batteries are consequently rated according to amount of electricity that can be drawn from them in a given number of hours. You can, for instance, have a 40-hour battery or an 80-hour battery. These may be compared in a way to a 40-barrel cistern or an 80-barrel cistern. An 80-hour battery does not have to be charged as often, and consequently the system requires less attention. The outfit under discussion is made in two sizes—a 40-hour system which sells for $210, and an 80-hour that is priced at $250.

The generator makes about as much noise as the average gasoline engine, and is best kept in a shed or engine house. In such a building the exhaust is easily carried outside. It takes about four hours to charge the batteries, and running the generator that long twice a week is sufficient for ordinary needs. There is some deterioration to the batteries, and this will average about $3 or $4 a year. Counting replacement of bulbs, the upkeep will be about $5 cash outlay a year, not counting fuel and lubricating oil.

Feeding the World

What the Farmers Need—a Merchant Marine

By JUDSON C. WELLIVER



WASHINGTON, D. C., March 1, 1916.

MAYBE the farmer on a Middle West half-section doesn't look as if he had a very keen interest in the shipping question. But he has.

And he's beginning to understand the fact, in common with the rest of the farmers. His understanding is finding reflection in the opinions expressed by his respresentatives in Congress, too.

Discussion of the shipping issue is doing more, I should say, to bring the country to a common basis of understanding about our concern over the world war than any other one thing. In the first year of war it was pretty hard for people a thousand miles from the Atlantic Coast to realize that they were interested. Their interest has been brought home to them in a very concrete form by consideration of the shipping problem. Yet this shipping question is only one of many manifestations that cannot but impress us with realization that the war is a neighborhood affair, affecting all the nations and all their people.

Before the war farmers had no occasion to think much about the relation of their wheat crop to ships. They were about the most favored shippers in the world—most of the time—because there was shipping enough to give the lowest rates, as a rule, on what they had to send abroad. Much of the time it was a problem to get cargo for ballast. The wheat, meat, or whatever was ready to be sent abroad, got the call; just so it would pay for loading and unloading, and a nominal rate for the actual transportation, it was liable to get carried at almost any figure. At some seasons, indeed, there would be necessity for paying a good deal higher rate; but even then it could be pretty accurately figured that the foreigner paid the freight.

One important reason why freight rates from this country were low was that there was such an immense passenger business. Liners wanted all the cargo they could get, but they must sail on schedule time, and so cargo in some seasons came almost to command a premium. The real business, the real money-making operation of these great boats, was hauling people. To get something into their holds to keep them steady as they crossed the Grand Banks was the real question. A large share of American exports went that way; the cabin passengers actually paid the freight on the farmer's products. But the war has changed this.

Everybody is familiar with the illustration of the wonderful cheapness of ocean and railroad transportation which has been attributed to James J. Hill. The story went that a man in Minneapolis bought, at one of the great mills in that flouring capital of the world, two barrels of flour. One barrel he ordered put on a dray and delivered to his home in the outlying part of Minneapolis; the other he put into a car that was being loaded for seaboard, steamship, and Liverpool. He kept tabs on the expense of both deliveries, and when they had been made found that it had cost him a trifle more to deliver the barrel by dray in Minneapolis than the barrel that went 4,000 miles by rail and steamship to Liverpool!

In the face of such showings as that, it was never possible to get up much excitement in this country about the shipping business. Nobody was deeply agitated so long as our products were being delivered in good order to customers. There isn't much use doing for yourself something that you can hire the other fellow to do for you cheaper, and that was just the fact about our ocean shipping.

Make More Money Other Ways

Americans went out of seafaring in Civil War time, when the Confederate privateers ran our ships of commerce off the wide waters; and after the war they found more profit and attraction in navigating prairie schooners than the other kind. We had a continent to develop; why should we compete with the cheap ships of the rest of the world? So we got out of the habit of trying to haul our own products.

There was one exception to this rule: in the coastwise shipping business this country maintained a monopoly. Only American vessels, built, owned, and sailed by Americans, were permitted to engage in this business. There being no competition, the business flourished. But it did so only because it was protected in this fashion.

W

Then came the European war, and things changed. At first nobody appreciated what it all was going to mean. Now everybody is beginning to sense the truth.

First, there is almost no passenger business to pay the lion's share of the earnings of the passenger boats.

Second, Europe doesn't have so much to sell to us, so on what we sell to her we must pay higher rates, because it costs about as much to send a boat across the ocean empty as full.

Third, the nations in control of the sea are anxious to reduce their foreign buyings as much as possible in order to save money. They are all enforcing economies.

Fourth,—and at this point the United States is especially aimed at,—the allied countries want to buy as much as possible of their agricultural products elsewhere than in the United States, because they want to pay in something other than cash, and keep their cash for dealing in the absolutely essential munitions of war that are not to be bought anywhere else.

Fifth, and intimately related to the last consideration, the ships that come here from Europe nowadays come largely to haul away war material instead of our ordinary, normal, peace-time line of products. They're so full of munitions of war that there isn't the usual space for other things.

Sixth, there has been a great decrease in the world's available ocean-going tonnage since the war began. The German ships are lying at their docks; many of the allies' vessels have been drafted to naval service; others have been taken for colliers, transports, and the like; a big tonnage has been destroyed.

England Realizes Shortage

Great Britain has realized the seriousness of this shipping shortage, and has taken drastic steps which practically make the whole ocean-going tonnage of the empire a government affair. At the beginning of the war the government one morning announced that next day it would take over the complete control of the railroad system of the country; it was necessary to do so in order to insure that it should serve both economic and military purposes alike as well as possible. The same necessity has more recently arisen in connection with ocean shipping, and the same treatment has been given.

Out of all this has come inevitably a striking change in the relation of American business to ocean shipping. Instead of getting our wheat hauled across the North Atlantic as ballast, it has recently been calculated that it costs from 35 to 40 cents to deliver a bushel of American wheat in France. The Frenchman is paying the cost, and it is so high that he is grumbling about it, and has, like the Britisher, taken steps for better and closer government control of his ships.

Everything relating to shipping is being done, in short, with reference to the needs of the countries that own ships; our interest, which in peace was given all consideration, is now a mighty unimportant detail.

And that is likely to continue the situation for a long time to come. After the war there will not be an immediate recovery of normal relations. The nations are getting reconciled to the belief that it is going to be a long war.

Therefore the necessity that America do something to make itself more nearly independent in the matter of shipping. There are various proposals. The Washington administration is supporting a bill to invest $50,000,000 of government money in ships. There are many conditions, among them an assurance that the Government will not remain permanently in the business. There is need for encouragement to ship-building in this country, and this is proposed to be given. There is also need to permit foreign-built ships to be used in the most effective way under the American flag, whether in the overseas or in the coastwise trade; but there is objection in some quarters to granting these privileges too freely as to the coastwise trade.

It is too early in the session of Congress to predict what shipping legislation will pass. It is now very apparent that it will take many years to develop a shipping policy under which our merchant marine will be permanently restored. After the war this country will have just as cheap money as Europe, and therefore will be able to engage in this business in competition with Europe.

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Put *your* early rising problems in Big Ben's hands — just tell him what time in the morning you want to get things stirring around your place.

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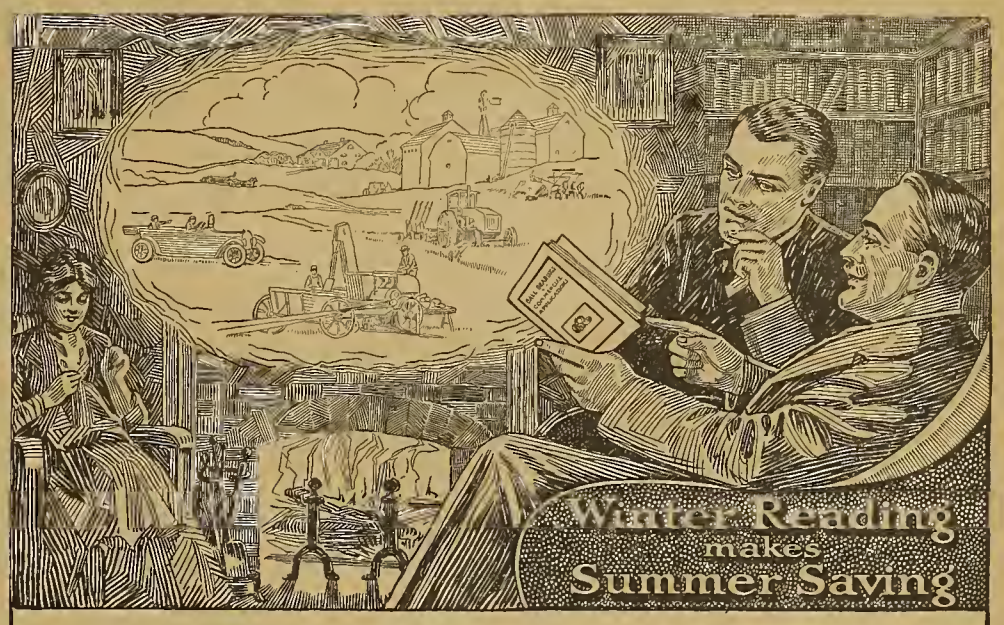

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"I first read about it in a Farm Paper advertisement. This advertisement made such strong statements about Ball Bearings it set me thinking. It made me wonder if Ball Bearings in *my* farm machinery wouldn't *save me money.*

"The ad said—'Send for our Booklet—and we'll prove that what we say is so.'

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will save me money. They have so many mechanical advantages over any other type of bearing that I'm going to equip every bearing and rotating part of my machinery with them—my automobile, too.

"Do you know a machine is only as good as its Bearings? The fuel and oil you use—the wear and tear of depreciation—are largely a question of Bearings.

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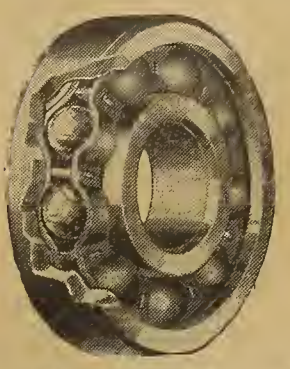
New Departure Double Row Type
A single, self-contained, "fool-proof" unit carrying *all* the loads and stresses simultaneously from *whatever* direction they may come with equal efficiency, and reducing friction to the vanishing point.



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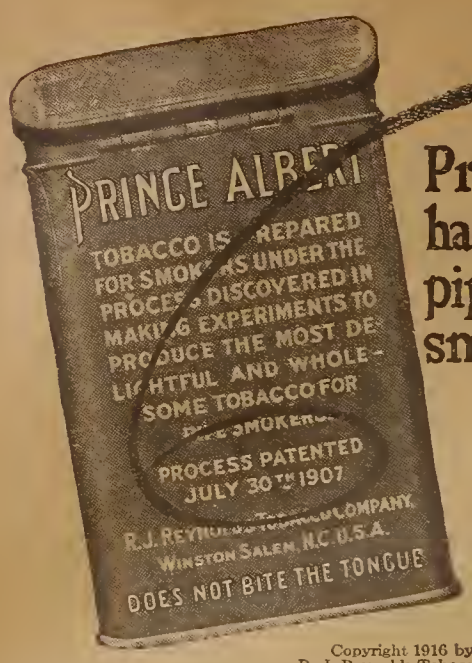

Prince Albert tobacco has made three men smoke pipes where one smoked before!

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Your supply of Prince Albert awaits yaur cheery nad at the nearest store that sells tobacca. Tappy red bags, 5c; tidy red tins, 10c; paund and half-paund tin humidars and that fine crystal-glass paund humidor with spange-maistener tap that keeps the tabacca in such excellent canditian.

PUT fire to that friendly old jimmy pipe of yours chock-full of Prince Albert—if you want to know *why* the national joy smoke has revolutionized pipe pleasure; *why* Prince Albert has trebled the number of pipe smokers in six years!

Test out P. A. to the last ditch! Puff your way into that enticing flavor, fragrance and long-burning coolness. Your confidence will never be abused. The patented process fixes that—and *cuts out* bite and parch!

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will *set free* any pipe-shy tongue! It will give *any* man *all* the pipe happiness he ever yearned for!

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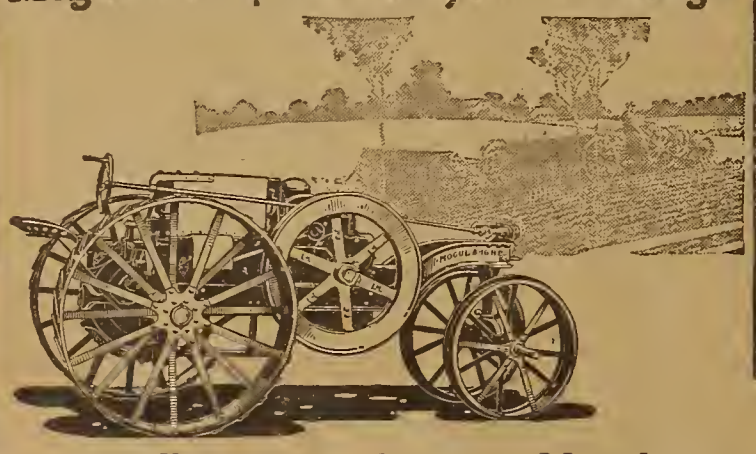

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Mogul 8-16 is the one light tractor that burns cheap oil fuel—kerosene, benzine, naphtha, and other low-grade distillates—successfully. It costs only **$675 cash, f.o.b. Chicago.** Your local dealer has a sample machine that you can see and study, and he can probably refer you to many farmers who know that the **Mogul 8-16** does, better and cheaper, the heavy work of the farm for which you are now using horses. If he cannot, write us. We can. We will also send you our 100-page tractor book, "Farm Power," which tells fairly why you should own and use a modern **Mogul 8-16** light tractor. Don't delay. Buy it now.

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Your Questions

Standard-Bred Horses

What do the terms Thoroughbred and Standard-bred mean as applied to horses?
C. G. W., Kentucky.

THOROUGHBRED is the name applied to the English running race horse, and is the name of a breed. It is in no way associated with such terms as pure-bred or pure-blooded. The Thoroughbred horse came from Oriental stock, and was developed into a definite breed about the year 1700 in England.

The standard-bred horse is not strictly a breed, but includes animals which are bred to a standard of performance. They must trot one mile in 2 minutes 30 seconds and pace it in 2 minutes 25 seconds, or better. This breed, if it may be called a breed, was developed in Orange County, New York, and was more fully developed in Kentucky and California. Standard-bred horses are developed largely from Thoroughbreds, and both have been the foundation for much of the trotting stock in this country.

A Poplar Problem

I have just filed on a homestead here in Canada, and it is covered with small timber, mostly poplar and jack pine. I know from experience that if poplar is cut off in the winter it will shoot up from the roots when spring comes. Of course the jack pine can be cut any time, and that finishes it.

Everyone here tells me to pile up my poplar and jack pine in long windrows and in spring when the wood is dry enough to burn well to set fire to it. They say that this will burn everything clean to the ground, including the leaf mold. Now, I think this leaf mold should be plowed under as, in my judgment, it is good plant food. Now, if you will publish this I feel sure that I can get advice from experienced people who can tell me how to kill poplar trees so they will not sprout, and who will also advise about the leaf mold. *C. M., Canada.*

ONE way to kill poplar is to girdle well in the spring and allow it to stand until fall, when the trees may be felled and the stumps grubbed out, blown out, or pulled out with a stump puller. Plowing the leaf mold under is doubtless the wisest method if you consider the ultimate good to the soil. But the returns for the first few years would be good in any case because of the fertilizing value of the wood ashes. Comments are invited from readers who have been through the problem now facing this Canadian homesteader.

Entrance Requirements

What are the entrance requirements for some of the Eastern colleges and universities? *O. W. K., Indiana.*

FOR the regular courses most colleges require a high-school training or its equivalent. Entrance examinations may be required in some branches, notably English. Particulars may be secured by addressing the registrars of the agricultural colleges located at Storrs, Connecticut; Newark, Delaware; Gainesville, Florida; Athens, Georgia; Orono, Maine; College Park, Maryland; Amherst, Massachusetts; Durham, New Hampshire; Brunswick, New Jersey; Ithaca, New York; Raleigh, North Carolina; State College, Pennsylvania; Kingston, Rhode Island; Clemsen College, South Carolina; Knoxville, Tennessee.

Catalpa for Posts

What do you think as to the advisability of planting catalpa trees for fence posts? When should they be set, and in what sort of ground?
A. B. Longworth, Ohio.

A CATALPA plantation for fence posts is a profitable thing for the man who will give them proper care, especially if he has an irregular patch of land that does not work conveniently into his cropping plans. These trees also make an excellent windbreak while growing into useful timber. At the age of six or eight years each tree should furnish one post. In ten or twelve years they should furnish two or three posts each, and not very long from that time each catalpa should furnish a telegraph or telephone pole.

The best method is to plant them 5x5 feet apart, each way, in the beginning, so as to cut every other row when of the size to furnish one post. This thins the plantation, and when the remaining trees are large enough for each to furnish two or three posts, every other tree of the remaining rows can be cut. The surviving trees may now in due time be harvested for telegraph or telephone poles, or a large number of fence posts from each tree.

The trees may be grown from the seed and the seedlings transplanted early in the spring into their permanent places. It will be necessary to give clean cultivation for two or three years after the trees are set. Some attention in the way of pruning will make them grow "in the way they should go"—up into a tall, straight, single trunk.

What to Feed the Sow

What shall I feed a sow which has a large litter of pigs but not enough milk to feed them? The sow is in good condition, but just cannot feed her young.
S. B., Pennsylvania.

REALLY the time to feed for the best results is before farrowing time. Then the sow should not be given any heating food for at least two weeks. Bran, middlings, roots, apples, and potatoes are good for this feeding. After farrowing, the sow should have no solid food for at least twenty-four hours. Give her only water. After that bran, middlings, and sweet apples can be fed sparingly for a few days. Then the ration can be increased, and if skim milk can be added to the ration so much the better. It can be given in considerable quantities. After the first week some corn meal and a very little oil meal may be fed. Begin with not more than a quarter pound of oil meal, and increase gradually to a pound daily. Ground oats are also good.

For a sow supporting a large litter of pigs the following ration will be satisfactory:

Two parts, by weight, of ground oats, bran, and wheat middlings, and four parts of corn meal, adding from one-quarter to one pound of oil meal for each day's feeding, according to whether skim milk can be supplied or not. The more skim milk the less oil meal. After the first week the sow may take liberally of this ration.

Homesteads in Nevada

I should like to know something of the opportunities in Nevada on government homesteads, also where the land offices are located. *C. E. W., New York.*

NEVADA has in the past been chiefly a mining and a ranch country. The agricultural lands are mostly in the valleys between several ranges of mountains that run north and south. The land needs irrigation, and though water is plentiful in the lakes and rivers of the State the task of getting it onto the land is expensive. Considerable irrigation is done by pumping, since the water is near the surface in most sections. Nevada lands are open to homestead under both homestead and desert entry. The homesteads are either 160 or 320 acres, and the desert entry for 320 acres. The homestead land includes several million acres of forest. Grain does well, and alfalfa yields two crops at the higher elevations, and three crops in the lower valleys. The elevation of most agricultural land is from 2,000 to 6,000 feet. There are two land offices—one at the state capital, Carson City, and the other at Elko. These offices are in a position to supply further information.

Good Vinegar

Here is a question in vinegar-making. How long should I keep the bunghole of the barrel open? Should I keep it open until it sours enough, or should I shut the barrel before that time?
J. Forstner, Virginia.

IN a room or cellar where the temperature does not fall below 45 or 50 degrees Fahrenheit, the fermentation of vinegar will be complete in about six months, but three or four months will do the work if the temperature runs to 65 or 70 degrees. If some old vinegar or culture has been added, these periods of time will be cut down. It is best for the barrels to be filled not more than three fourths full, so as to allow the vinegar to come in contact with more air than if full.

When the vinegar is sufficiently sour the bungs should be tightly closed or it will deteriorate. The following instructions, if followed, will make the quality as high as can be attained:

Use sound, ripe apples, picked or picked up before they have become dirty,

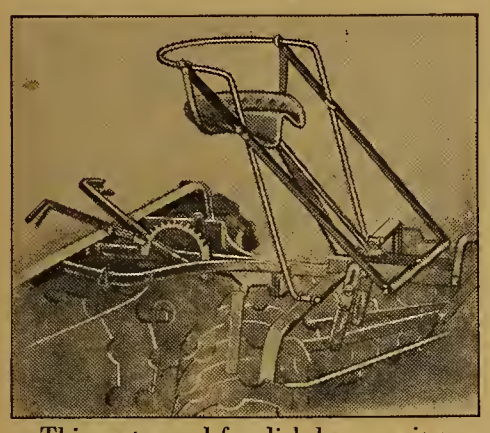
W

if possible, otherwise washed. Observe the ordinary precautions to secure cleanliness in grinding and pressing, and discard all juice from second pressings. If possible, let the juice stand in some large receptacle for a few days to settle, then draw off the clear portion into well-cleaned barrels which have been treated with steam or boiling water, filling them only two thirds or three fourths full.

By the addition of compressed yeast, or its equivalent, at the rate of one cake to five gallons of juice the time may be reduced to three months.

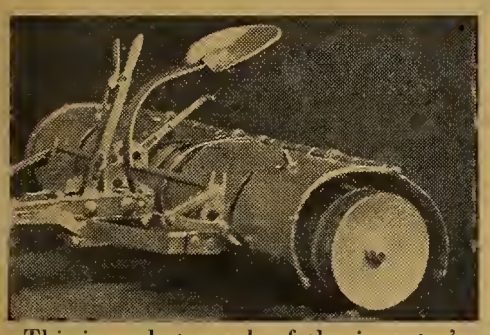
Disk-Harrow Inventions

THE pictures show two inventions calculated to make disk harrows, and especially double-disk harrows, absolutely safe. The safety seat guard has lately been put on the market by an Ohio concern. It gives the driver the satisfaction of a more secure seat when working on rough ground, or when handling a skittish team. The other disk harrow is the invention of a Nebraska farmer and, though not yet on the market, it shows the attention being given to the matter of safety.



This seat guard for disk harrows is a result of "Safety First"

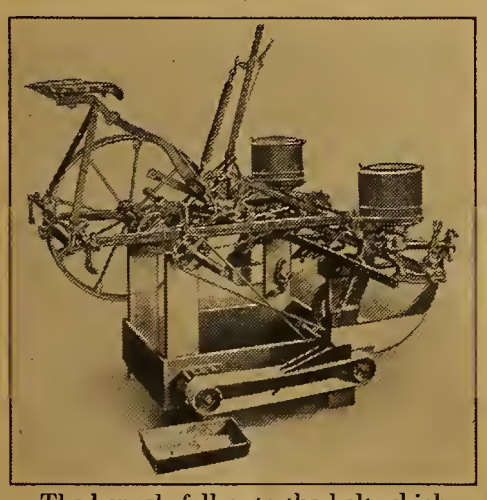
By pressing a foot pedal the driver of this harrow causes the front fender to drop so the cutting edges of the disks are completely covered. He claims that the covering protects the disk from rust and excessive weathering, and makes it safer when left in the yard or field, because stock cannot hurt themselves on it.



This is a photograph of the inventor's model. The shields when released close around the disks

Planter on Test Stand

THE accuracy of a corn planter's dropping mechanism is usually determined by mounting it on a testing stand such as the one shown in the picture. One wheel is removed and a crank fastened to the other one or, if desired, you can belt it to a small engine. Whichever way you use it, have the seed plates turn as fast as they do when the planter is used in the field.



The kernels fall onto the belt which drops them into the pan

For keeping a record of the drop, rule a sheet of paper like a checkerboard, except that you will need to have it 10 squares on a side so it will contain 100 squares altogether. Then start the planter and watch the drop. If it is set for three kernels, put down a figure 3 every time it drops three kernels, and 2 or 4, as the case may be, when it drops that number. When 100 hills have been dropped your record sheet will be full, and the number of 3's gives the percentage of accuracy.

E-W

The After-Cost

WHEN you buy an automobile, you expect to use it not only this year and next year, but for four or five, or six years, or even longer. So, while the first cost is always important, it is not nearly as important as the after-cost.

You want a car that can be operated economically. You want a car that will give you the greatest mileage per gallon of gasoline and oil. You want a car that is properly balanced and light in weight so that you will get high tire mileage.

This question of operating expense is one that some people overlook but it is the operating expense that makes a car either a good investment, a health and pleasure giving investment—or a burdensome annoyance and financial drag.

The World's Motor Non-Stop Mileage Record, established last January by a Maxwell stock touring car, offers some interesting facts. Not claims or beliefs or opinions, but ***facts***—facts that are supported and vouched for by The American Automobile Association, the supreme court of the automobile industry.

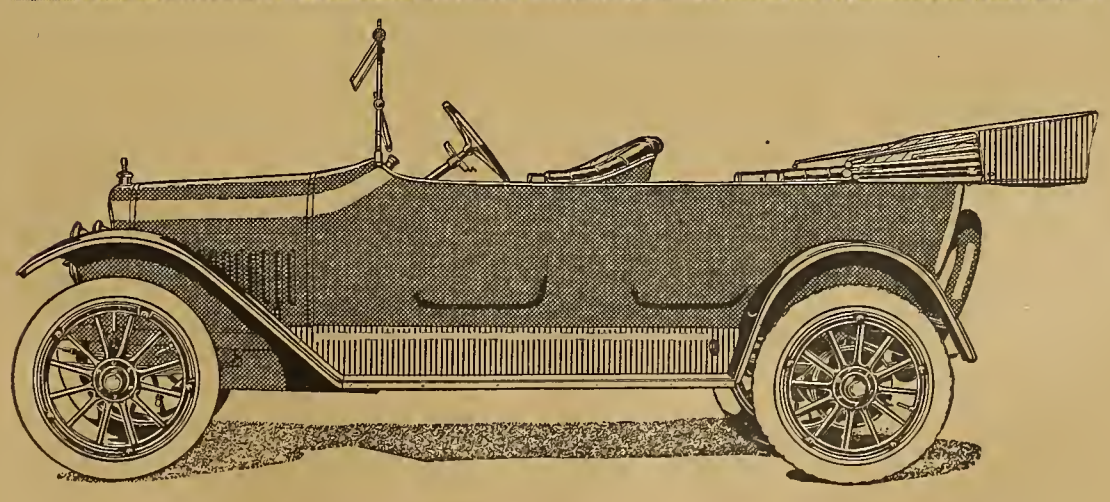
In the first place, the record breaking Maxwell car ran over town and country roads for 44 consecutive days and nights, averaging more than 500 miles per day. During this time—1,056 hours—the engine never stopped and the car stopped only long enough to take on gasoline, oil, water and a fresh driver. The ability of any car to run 22,000 miles in 44 days without stopping the engine is conclusive proof of its genuine merit and quality throughout.

But this is not all. Not only did the Maxwell prove its sturdiness, its wonderful endurance powers, but it established an average gasoline consumption of nearly 22 miles to the gallon. This is truly remarkable in view of the fact that this was primarily a Motor Non-Stop Endurance test and that no effort could be made to save fuel at the risk of stopping the engine.

In addition, the champion Maxwell stock car used only one gallon of oil to every 400 miles of its journey, and it went the whole distance of 22,000 miles on two and one-half sets of tires. We have never heard of anything that could compare, in the smallest degree, with these figures, the accuracy of which is officially and indisputably established.

Every Maxwell touring car turned out of our big Detroit factories is an exact duplicate of this car. The price of $655.00 is made possible by intensive manufacturing methods and the great number of cars we build during the year. If value, service and economy are of any importance to you, do not fail to inspect and test the Maxwell before making your selection.

Brief Specifications—Four cylinder motor; cone clutch; unit transmission 3 (speeds) bolted to engine, ¾ floating rear axle; left-side steering, center control; 56″ tread, 103″ wheelbase; 30x3½″ tires; weight 1,960 pounds. ***Equipment***—Electric starter; Electric headlights (with dimmer) and tail-light; storage battery; electric horn; one-man mohair top with envelope and quick-adjustable storm curtains; clear vision, double-ventilating windshield; speedometer; spare tire carrier; demountable rims; pump, jack, wrenches and tools. ***Service***—16 complete service stations, 54 district branches, over 2,500 dealers and agents—so arranged and organized that service can be secured anywhere within 12 hours. ***Prices***—2-Passenger Roadster, $635; 5-Passenger Touring Car, $655, F. O. B. Detroit. Three other body styles.



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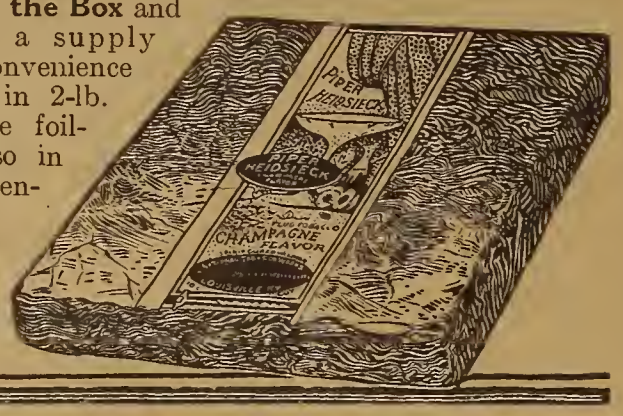

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DU PONT

Red Cross Farm Powder

Drawn from actual photo.—Note marked difference in growth between tree planted in blasted hole and tree planted in spade-dug hole.

lightens labor and increases profits. It loosens the earth, makes better rootage and provides increased nourishment for young trees. It rejuvenates old trees and makes them bear.

Practical Proofs

E. J. BARKER, Beech Bluff, Tenn., says: "I would not set trees without first subsoiling with explosives, even if it cost four times the amount."

J. C. SAYLOR, Penna., says: "Blasted trees the finest in the orchard."

O. C. LANGFIELD, Calif., says: "Planted 14,000 trees with dynamite—advanced value of land from $15 to $200 per acre in less than a year."

GET THIS BIG BOOK FREE

Describes the use of Red Cross Farm Powder for tree planting, land clearing, subsoiling, ditching and many other things. Tells what this modern method has done for hundreds of orchardists and farmers. Write to-day for this interesting 188-page

Handbook of Explosives No. 90

E. I. du Pont de Nemours & Co.
Wilmington, Delaware

Farm Notes

Judging the Old Engine

By B. G. Harley

WHEN is a second-hand engine worth buying? That is a question to consider if you have occasion to buy one at private or public sale. Sometimes the cylinder is scored or badly woru. It may need a new piston and rings, bearings, and timing gears. The cam or secondary shaft that operates the valves may be wobbly, the water jacket cracked or brokeu, or, takeu as a whole, it may be "dear at any price." If you are thinking of buying an engine, carefully look over the following points before it is put up for sale:

First turu the fly wheel over and over. The elastic stopping effect that is noticed every other revolution will indicate the condition of the cylinder. If a little gasoline is at hand, pour it in the spark-plug hole, replace the plug, and turn the wheel over and over several times. This will cut the oil and give you the plain truth. If it still has the same elastic effect, though not quite so noticeable, the cylinder is in good order inside. But if a hissing sound is heard as the wheel is turned over, the compression is leaking past the pistou rings from the explosion space into the crank case.

You can then count on a woru cylinder, worn piston rings, or both. A badly abused cyliuder with fine grooves running leugthwise can be remedied only by reboring and fitting a new piston. This job, if doue by a local machine shop, would probably cost $12 or more, depending on the size and construction of the engine.

Consider the Repair Costs

A cracked cylinder may be caused by ice forming in the water jacket. However, the inuer cylinder wall is much thicker thau the outer shell, and the cylinder wall will be safe if the cracks are small. They cau be shut with salammoniac solutiou at a slight expense. The connecting-rod bearings are the next in importance. If the lower end of the connecting rod is loose on the crank shaft, that is of slight consequence, as there is usually provision on all except the cheapest engines for taking up the wear on this bearing. But if the top end of the rod is loose on the piston pin, or if the pistou pin is loose in the piston, such troubles ought to be fixed. Piston pins are frequently neglected and, when a little loose, are allowed to knock and knock till they wear au elongated hole in the piston. The only remedy for this is to have the hole bored larger and have brass bushings driven in them, again a machine shop job costing from four to six dollars.

It is often a difficult matter to locate which bearing is loose. To make sure take an all-metal screw driver or a small piece of heavy wire about a foot long and hold one end in your teeth and place the other end against the cylinder wall. Get someone to turn the engine over several times. Close your ears with your hands. This will shut off the outside sounds and you can thus easily locate the knock of the loose bearing.

Loose main bearings are usually of small cousideration, as there is always ample provision for tightening these. The timing gears that operate the valves and control the time of the spark seldom show much wear, but if they are exposed and allowed to run dry they may have ground their teeth to nearly a knife edge. If the gears are either worn or have lost any of their teeth they must be replaced with new ones. This is not a great expense, especially if the eugine is a standard make.

It is needless to emphasize the importance of getting a good make of engine. Old engine builders have exercised their highest judgment in designiug their eugines so as not to be obliged to alter their design for every this and that fancy. Instead, the design is standard, thus enabling them to make their parts in euormous quantities, all parts interchangeable. This is a great aid and saving to the user. Replacement of parts can be done at home and at little expense compared with machine shop work.

The cams that operate the push rods for opening and closing the inlet and exhaust valves may show excessive usage. These and the cam-shaft bearings can be replaced at a moderate price. The inlet or exhaust valve if broken, which usually means the head is loose on the stem, can be replaced for seventy ceuts to a dollar each.

The gasoline pump that forces the gasoline from the tank iu the base of the engine to the mixing chamber near the cylinder head may be badly woru. A new bronze plunger and new packing are frequently all that will be needed, a dollar or a dollar and a quarter will remedy this evil. If the sparking apparatus is mechanical or make and break, examine its condition. Also look at the spark coil, and the vibrator points on the coil if a jump spark is used. New batteries will of course be necessary.

Size the engine up carefully before making your bid, figure the cost of getting it in good trim, and allow plenty extra because machine work is costly. An engine may seem to be "dirt cheap" yet prove in the end to be a "dear bargain."

Where Cement is Made

THE cement mills of the country produced last year over 86,000,000 barrels. At four sacks to the barrel this means over 3½ sacks for every man, woman, child, and infant in the United States. This production was a slight but healthy increase over the previous year, aud the prices were a trifle less.

Nearly everyone can get cement at about the same prices because of the wide distribution of the mills. The industry is now well developed in these States: Maryland, Virginia, West Virginia, Tennessee, Alabama, Georgia, Pennsylvania, New York, Ohio, Indiana, Michigan, Kentucky, Iowa, Missouri, Kansas, Nebraska, Oklahoma, Texas, Colorado, Utah, Montana.

Post-Charring Tests

IT PAYS to char the butts of some kinds of wood used for fence posts, while other kinds last better without charring. According to the Missouri Experiment Station, which has made a study of this matter, the woods which last longer when charred are: Black walnut, river birch, oak, hedge, sugar maple, black locust, honey locust, Kentucky coffee tree, dogwood, black ash, aud catalpa.

Those that rot quicker when charred are: Willow, cottonwood, ironwood, hackberry, and basswood.

Those which seem to be neither benefited nor injured by the treatment are: White walnut, hickory, white elm, and sassafras.

Preservation of posts by charring is based on the fact that charcoal cannot rot. But the tests referred to showed that the charcoal coating ou certain woods cracks aud fungus enters through the cracks, causing the posts to rot.

Send to Us

THERE'S a reason why you should write your experiences to us. We are interested in the same things that interest you. Tell us about your farm life and your experiences with live stock, poultry, crops, the markets, and the home. Send in your questions too. Address your letters to Farm and Fireside, Springfield, Ohio.

Lost People

JAMES L. KIELY left his home in Brooklyn, New York, July 5, 1881, at tbe age of fifteen years. He bad brown hair, gray eyes, and was rather tall. A month later he wrote tbat be was working on a farm near Rock Island, Illinois. Information regarding bim will be greatly appreciated by bis stepbrothers, sisters, and widowed mother, Mrs. Sarab A. Mills, R. 43, Norwalk, Connecticut.

VIRGIL DAVIS, formerly of New Baden, Illinois, was last beard of in St. Louis in 1910. He bas dark brown hair, brown eyes, weight 135 pounds, height 5 feet 6 inches, age at present twenty-four years, and bas a scar on his rigbt wrist. Information concerning bim is sought by bis motber, Mrs. Lydia Collier, Sawyersville, Illinois.

Would like to communicate witb anyone knowing of the following persons: Tberess and Julia McMabon, Bridget Rategan, or any of her relatives, and Michael Gallivan, all of whom lived in Baton Rouge, Louisiana, in 1862. Micbael Gallivan was last beard of about thirty miles from St. Paul, Minnesota, on tbe St. Paul and Pecevie Railroad. Any information of any of these people or their relatives will be gladly received by Mrs. F. H. Gaudet, 323 North Street, Baton Rouge, Louisiana.

JAMES HARRISON BOX, age forty-six years, height 5 feet 10 inches, has been missing since August, 1914. He signs bimself Harrison. Mrs. S. E. Box, Morrillton, Arkansas.

W.

Mechanics of Spraying

Some Standard Pumps and a Few New Ones

By CARLTON F. FISHER

THE first "sprayer" I ever used was a sprinkling can of the common garden variety. A druggist had sold me some sort of bug killer for slugs on my gooseberry bushes, and he said to mix half a pound of the powder in two gallons of water and sprinkle it on the bushes. It worked all right, but it took too much time and too much poison in proportion to the value of the berries.

This simple jack enables the gas engine to pump spray mixture, saving one man

The simplest kind of real sprayer is the small garden atomizer of about a quart capacity. These cost from about 25 cents to $1, and can be used for throwing poison sprays on garden plants, rosebushes, and small shrubbery. You can adjust some of them so they will throw a coarse spray or a fine mist. Another inexpensive form of spray pump is the bucket style. This is a time-saver over the atomizer because there is no covered reservoir to fill. Bucket spray pumps are quite satisfactory for spraying small trees and shrubbery. A good bucket sprayer costs from $2 to $5, and can be drafted into service for washing buggies, windows and, if need be, as a fire extinguisher.

A more convenient spray outfit for operations of limited size is a knapsack sprayer, which is made to be carried on the back.

In operating some of these, you must first pump up pressure and then spray till the pressure goes down, when you must stop and pump it up again. In others the pump is arranged so you can keep up pumping with one hand while you spray with the other. I have used one of this style for spraying kerosene oil on cows to keep the flies off while milking, and it has various other uses as well, such as spraying disinfectant on live stock when dipping is inconvenient. Knapsack sprayers cost from $4 to $15; the cheaper ones are made of galvanized iron, and the better ones are constructed chiefly of brass.

Field-Nozzle Attachments

The sprayer that is probably in most general use is the barrel style. This is simply a strong wooden barrel for holding the spraying mixture and a pump, together with hose and nozzles for applying it. Barrel sprayers may be mounted on skids, truck, or cart. For small trees and shrubbery one man can do the pumping and apply the spray, but usually two men are needed. A barrel sprayer with two men to work it is large enough for a small orchard of several hundred trees if they are low-headed. A complete barrel sprayer costs from about $12 to $35, and such an outfit can be used for whitewashing, applying cold-water paint, and various liquid disinfectants.

By attaching field nozzles and a few additional connections a barrel sprayer may be used for spraying as many as four rows of hoed crops. One of the handiest outfits for keeping the pests off hoed crops is the more recent wheelbarrow traction outfit. One man pushes this between the rows just as he would an ordinary wheelbarrow. The wheel drives a pitman which operates a small pump, and this pump forces the spray material out of the two nozzles, one on each side of the outfit. Thus one man can spray two rows of potatoes, cabbage, or any crop grown in rows as fast as he can walk. The wheel is broad enough to furnish traction even in very loose soil. An outfit of this kind sells for from $25 to $35.

Traction sprayers are also made in horse-drawn styles, all of which get their power from the axle. A convenient clutch permits the pump to be thrown into or out of gear. This kind of sprayer is especially good for field work where the amount of spray to be applied is about in proportion to the distance traveled, but it is also used for orchard work where the outfit is not required to stop long at a time. One company guarantees two pounds of pressure for every foot of travel when solution is being pumped.

High Pressure Desirable

For large orchards the power sprayers mounted on specially made trucks and driven by a small engine are most satisfactory. Two men with such a sprayer will do more and better work than four men with hand outfits. I remember one rainy summer in Wisconsin some years ago. One orchard equipped with one of these power sprayers had an excellent crop of apples solely as the result of the owner's ability to spray thoroughly the trees in the short intervals of good weather. Neighbors with smaller outfits couldn't spray fast enough, and they were powerless to keep the pests in check.

The tendency in spraying nowadays is to use higher pressures, and there is a good reason for this. As the pressure increases, the spray becomes finer and more penetrating, hence the work is bound to be more thorough. The chief problem in spraying is to get the poison on where it will do the most good, and so thoroughly that every spot is reached. Power outfits are now made which will develop from 250 to 300 pounds of working pressure. One of the high-pressure outfits is now made with a system of direct belting, so it may be driven by any small engine having a speed of 450 to 550 revolutions per minute.

Another improvement is the power jack for hand pumps. This little device is for the convenience of the man who wishes to make his gas engine operate a barrel pump or any kind of hand pump. A belt is simply attached to the pulley of the jack and a mechanical arm works the pump handle. This little device is priced at $12.50.

Besides the improved mechanical features of the spraying outfit itself, the construction of the wagon on which it is mounted is worth attention. One spray outfit has both front and rear axles movable and connected by cross rods so that a turn of the tongue shifts the back wheels to such an extent that they will track with the front ones in turning corners or going around a tree.

EDITOR'S NOTE: Further information on spray machinery, mixtures, and methods will be given to anyone requesting it.

A spray outfit of this kind has a wide range of usefulness at small expense. It's good for a small orchard, the garden, and for disinfecting live-stock quarters

W

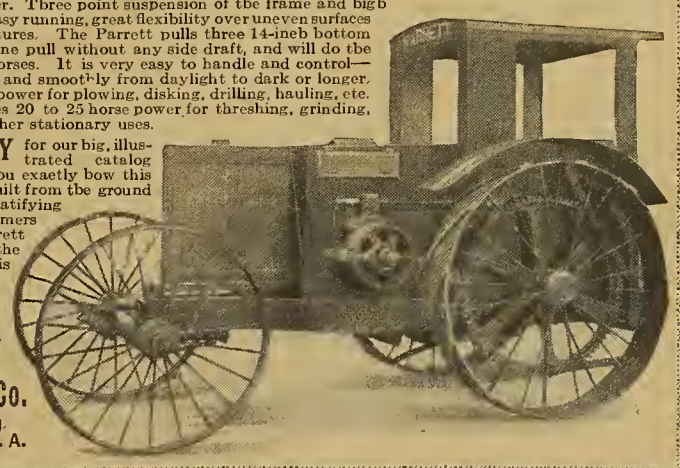
Mr. Laible's experience is interesting, isn't it? It brings out many of the things you want to know about before you buy a tractor, doesn't it? It is actual, practical information—not a lot of manufacturer's claims. We print it in this advertisement because we prefer to let PARRETT owners tell what a PARRETT Tractor will do and how well it does it. We prefer that you take their word for it, rather than ours. And, if you are thinking of buying a tractor, just drop us a line and we will send you many more farmers' names to whom you can write, and ask anything you wish to know. Their experiences are the safest guides you can follow in deciding which tractor to buy.

You want to find out if the tractor you buy WILL DO ALL YOUR WORK, before you buy it. You want to know how well and economically it will do it; how well it will stand up; how durable it is; whether it will go anywhere on your farm; how easily handled and a lot of other things.

We can tell you all this, but if you get it FROM THE MAN WHO OWNS ONE, who speaks from actual experience, there can be no doubt about its being unbiased or being merely selling argument or manufacturer's claims.

PARRETT TRACTOR
"SPEAKS FOR ITSELF"
ONE MAN ALL PURPOSE

The Parrett All-Purpose Tractor has been designed on a practical, common-sense line, not thrown together to meet a price. It is unusually simple in construction, light in weight, and best of all, strictly a one-man outfit. The frame is strongly constructed of 7-inch channel steel, hot riveted, bolted together and braced throughout. A 4-cylinder motor is mounted horizontally across the frame giving a powerful, simple, direct drive and which makes it possible to go where others dare not attempt. It has no bevel gears thus eliminating all loss of power. Three point suspension of the frame and high front wheels assure easy running, great flexibility over uneven surfaces and short turning features. The Parrett pulls three 14-inch bottom plows on a straight line pull without any side draft, and will do the work of eight to ten horses. It is very easy to handle and control—works evenly, quickly and smoothly from daylight to dark or longer. It furnishes 10 horse power for plowing, disking, drilling, hauling, etc. On the belt it supplies 20 to 25 horse power for threshing, grinding, baling, hulling and other stationary uses.



WRITE TODAY for our big, illustrated catalog folder. It will show you exactly how this wonderful tractor is built from the ground up. It tells of the gratifying experiences other farmers are having with Parrett Tractors every day in the year. Send for this folder today and see for yourself how the Parrett Tractor will be a money-saving, money-making investment for your farm.

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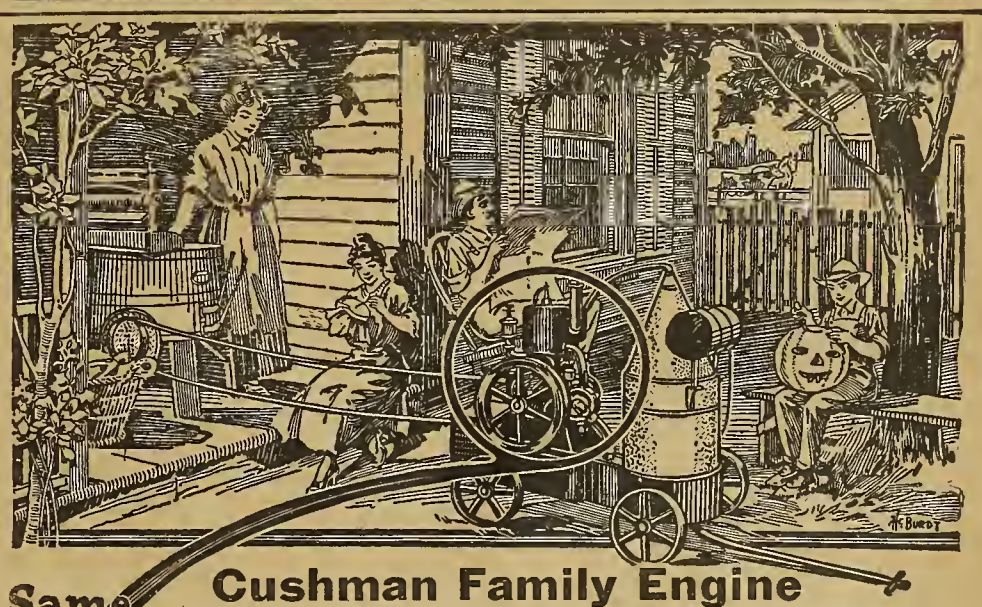


Same Engine Used on Binder

Cushman Family Engine

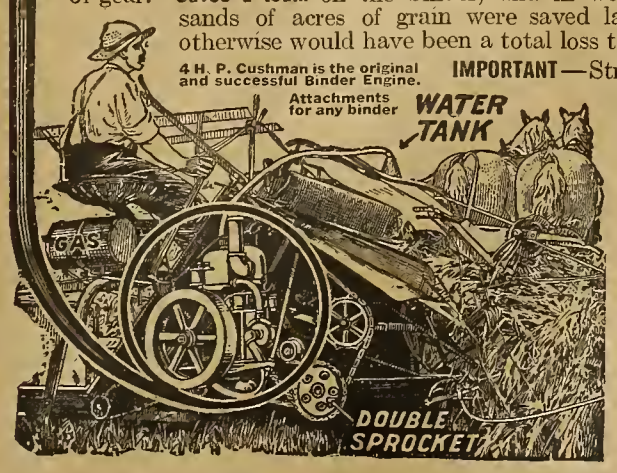
This 4 H. P. Cushman Truck Outfit is so handy that it is called the "Family Engine." It is very light in weight—engine **weighs only 190 lbs.**, and entire outfit, including water tank, weighs only 375 lbs. A child can pull it around from job to job. **Cushman Engines weigh only one-fifth as much** as old-fashioned heavyweight engines, yet run more steadily and quietly because of modern design, perfect balance and Throttle Governor. No loud violent explosions; no fast and slow speeds.

Cushman Light Weight Engines

Weigh Only 40 to 60 lbs. per H. P.

These are the modern engines, built especially for farmers who need an engine **to do many jobs** in many places instead of one job in one place. No longer necessary to put up with old-style back-breaking heavyweights.

The 4 H. P. Cushman is a wonderful farm engine, because in addition to doing all ordinary jobs better than heavy engines, it may be attached to moving machines, such as **grain binders, corn binders, potato diggers, etc.**, driving the operating part, leaving the horses nothing to do but pull the machine out of gear. **Saves a team** on the binder, and in wet season **saves the crop.** Thousands of acres of grain were saved last year by the Cushman that otherwise would have been a total loss to the farmer.



IMPORTANT—Stripped for binder, **engine weighs only 167 lbs.**, and weight on rear is **balanced by** the simple cone **water cooler on the front** of binder. This balancing and the water cooling, to **prevent overheating** on all day runs, are necessary to successful work in a hot field.

8 H. P. Double Cylinder Cushman weighs only 320 lbs. Also 15 and 20 H. P. double cylinder light weight engines. **Cushman Engines are not cheap,** as they are better built of better material, but they are **cheap in the long run.** Engine Book free.

CUSHMAN MOTOR WORKS
807 N. 21st. St. Lincoln, Nebraska

Cover Weeds

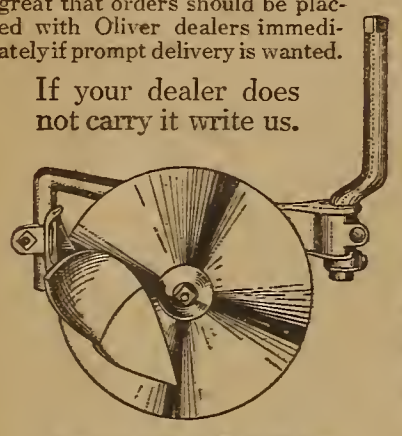
Plowing must be done this year so as to put weeds on the bottom of the furrow deep enough to prevent the harrow teeth from pulling them out, otherwise the danger from weeds will be great.

The illustration above shows how this is done with the Oliver combined rolling coulter and jointer illustrated below.

This can be used on Oliver wheel plows.

The demand for this device is so great that orders should be placed with Oliver dealers immediately if prompt delivery is wanted.

If your dealer does not carry it write us.



Oliver Chilled Plow Works
Plowmakers for the World
SOUTH BEND, IND.

Not One Cent For 3 Months

Think of it—not a cent to pay for any Majestic Engine you want for three whole months after you receive it! We want you to test it out on all kinds of work so that you can be absolutely sure that it is just the engine you want before you even think of buying it. If it isn't, return it at our expense. If it is, you may make the first payment in 3 months and the balance in 6, 9 and 12 months—giving you

A Year to Pay

Without Interest

Only the great House of Hartman with its enormous $10,000,000 capital can afford to sell an engine at the remarkable bargain price of the Majestic, back it up with a strong guarantee and extend such liberal credit terms.

Majestic Engines

2, 3, 5, 7, 9 and 14 H-P.
Gasoline, Kerosene, Naphtha, Gas
Stationary, Portable, Saw Rigs

The Majestic is the "happy medium"—neither too heavy nor too light. Has fewer number of parts—a marvel of simplicity—has the most wonderful automatic mixer ever put on a gasoline engine. All are horizontal, 4-cycle type, open jacket, hopper cooled.

YOUR CREDIT IS GOOD

No bank deposit—no references—no mortgage—no embarrassing questions—no collectors—no red tape. You may pay all cash if you prefer but it costs you not one cent extra to take advantage of Hartman's most liberal credit terms.

FREE Engine Book Tells why the Majestic is the biggest engine value in America today and explains the famous Hartman selling plan. Mail coupon for Engine Catalog No. E254

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Without obligating me, send your Engine Catalog No. E-254 and particulars of selling plan.

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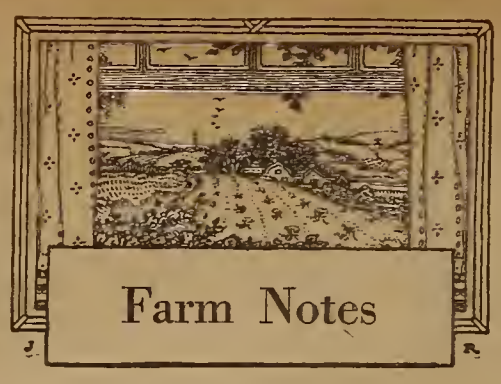


Farm Notes

How to Pop Corn

WITH its customary thoroughness the U. S. Department of Agricnltnre has laid down rules for popping corn so yon can get the largest possible amonnt of buttered crispness and almost no "old maids." First have a good hot fire all ready. Then measure out your popcorn into the popper. Pnt in jnst enough barely to cover the bottom of the popper one kernel deep. If you take more the popcorn will not be so crisp and flaky.

Start the corn heating slowly, so the kernels will not scorch. The right time for good corn to start popping is in just a minute and a half. If it takes longer you either have too little heat, the corn is poor, or there are drafts in the room which cool the popper. Be careful also to have the corn free from chaff, which scorches qnickly and may give the corn a bnrnt taste even thongh the kernels themselves are not overheated.

One pint of nnpopped corn will give from 15 to 20 pints of popped corn when these simple rules are observed.

Bury the Weeds Deep

By John Coleman

"IT IS difficult to eradicate the weeds successfully and at the same time pay off a mortgage," says one of Canada's best farmers, "bnt we have to do the former if we hope to succeed with the latter.

"In dealing with the weed problem it is generally admitted that prevention is better than cure: bnt, unfortunately, very few of us get awakened to the danger of weeds nntil they have become strongly entrenched and established."

He states further that "When farmers stop to realize the loss of moisture with the consequent loss of crop, due to the growth of noxious weeds, and that the aggregate loss in Saskatchewan is at least $25,000,000 per annum according to a conservative estimate by the Weed Branch of the Department of Agriculture, it is hoped and believed that more attention will be paid to this serious inroad into our annual profits, with the view of reducing this ever-growing menace to the possible minimum."

These three utterances can well be taken seriously by us in the United States this year, more so, perhaps, than in a decade past.

The excessive wet weather of last year brought forth an unusual growth of weeds which matured, producing an exceptionally strong weed seed. This seed is now being protected from the winter's freezing by the unusual growth of vegetation. When spring opens, these seeds will sprout and grow, causing serious damage to the crops for this year and for years to come, unless they are combated.

If the spring opens early and is warm, the danger is going to be especially great. This is because of the great amount of plowing that must be done before the crops can be planted. Consequently, by the time we are through plowing we shall be turning under a growth of weeds. If the spring is late, cold, and damp, the weed seeds will not sprout and grow as vigorously, bnt in plowing, as the farmer must do with the ordinary plow, half burying the weeds and trash, the final preparing of the seed bed with the harrow will pull out the trash and scatter the weed seeds on top of the ground where they will grow and produce a luxuriant growth before the crops can get a start. The reason for this growth is easily explained when one considers that weed seeds germinate and grow at a much lower temperature than any of the crops which farmers plant.

The redeeming feature of the whole problem is this: If one plows his ground in the proper manner, being careful to see that all the weed seeds and trash are placed on the bottom of the furrow where the harrow teeth cannot pull them out and scatter them on top the ground, he will turn these weed seeds and trash into profit.

The assumption that either a disk or moldboard plow of itself will bury this trash on the bottom of the furrow is wrong. Everyone knows that it is absolutely impossible from the nature of plow moldboards to bury trash on the bottom of the furrow. Weed hooks and chains have been used for many years with bnt partial success. In localities where jointers are nsed, trash is buried on the bottom of the furrow. The reason for this is becanse the jointer tnrns a little fnrrow on top the nnplowed ground. The plow following turns on the bottom of the furrow the trash which is ordinarily left straggling through the turned furrow.

The ordinary disking of the ground in the spring before plowing for the conservation of moisture is a good thing in ordinary seasons, but this year, when the ground is full of moisture and when there is snch an immense amount of it to plow, it is a grave qnestion as to whether the farmer should not equip his plow with a colter and jointer and start to plow when he would ordinarily start to disk.

The disking of the ground on top before plowing this year will have a tendency to make it impossible for the plow to bury the weed seeds and trash as deep in the ground for the simple reason that the action of the disk mixing the seeds in with the earth will prevent the plow from putting all trash on the bottom of the furrow.

Uncle Sam Studies Fences

THE Government has just issued a good bulletin on fences, entitled "Cost of Fencing Farms in the North Central States." Here is the gist of it:

Nearly two thirds of the farm fences in Ohio are made of woven wire.

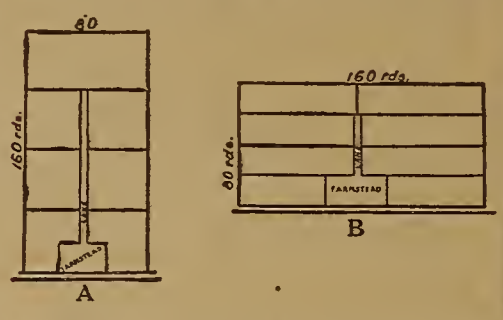
Rails split for fences thirty years ago cost about $1.50 per hundred at that time, and the same rails that are still in good condition sell for $2 or $3 per hundred, or enough to buy good woven-wire fence.

The best way to remove a hedge fence is to pull it ont by the roots with a tractor or heavy team.

Stone walls make poor fences for sheep and goats, which climb them readily.

Farms having the greatest amount of frontage on public highways nsually require the most fence.

For example, Plan A requires 120 less rods of fencing than Plan B, though both



farms are the same size, and both are fenced in the most economical way.

Barbed wire makes a satisfactory fence where cattle only are to be considered.

Woven wire is suitable for hog pastures and for fencing horses, colts, sheep, and small stock.

A woven-wire fence made entirely of No. 9 wire will last about twenty-one years, according to estimates collected by the Government.

A woven-wire fence made with No. 9 top and bottom wires and No. 10 laterals and stays will last about nineteen years.

A fence with No. 10 top and bottom wires and No. 11 laterals and stays will last about seventeen years.

A No. 12 top and bottom wire and No. 14 laterals and stays will make the fence last a little less than thirteen years.

No. 9 or larger wires are now recognized as most economical for permanent fences.

When fences are made of woven wire with barbed wire above, have the woven wire high enough so that large hogs cannot get their heads over it and break it down.

A good general-purpose woven wire fence is one about four feet high made up of ten line wires, the bottom wires being three inches apart.

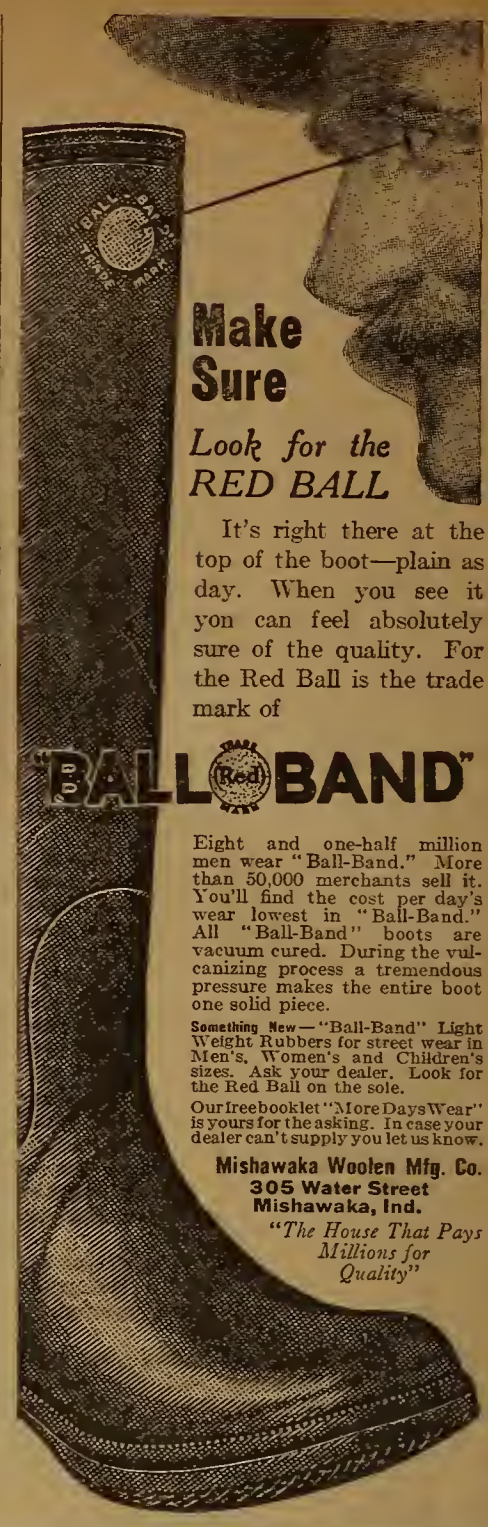
When buying fencing, a good plan is to consider the weight per rod. The heavier the fence is the longer it is likely to last.

New Books

CORN, by M. L. Bowman, is a revision of an earlier book published by Bowman and Crossley. It discusses the subject from the standpoint of growing, breeding, judging, feeding, and marketing. Well illustrated. Used in several agricultural colleges and other schools. Waterloo Publishing Company, Waterloo, Iowa. Price, $2.

The Pacific Northwest and Rocky Mountain States have developed world-wide fame as fruit sections. THE ENCYCLOPEDIA OF PRACTICAL HORTICULTURE, in four volumes, 500 pages each, has been published, dealing more particularly with horticultural matters in this section of the country.

The peach, pear, apple, and other tree fruits, nuts, cane, and small fruits, vegetables and truck crops, have all received treatment. The Encyclopedia of Horticulture Corporation, North Yakima, Washington, U. S. A. Price, $20.



Make Sure

Look for the RED BALL

It's right there at the top of the boot—plain as day. When you see it you can feel absolutely sure of the quality. For the Red Ball is the trade mark of

"BALL-BAND"

Eight and one-half million men wear "Ball-Band." More than 50,000 merchants sell it. You'll find the cost per day's wear lowest in "Ball-Band." All "Ball-Band" boots are vacuum cured. During the vulcanizing process a tremendous pressure makes the entire boot one solid piece.

Something New—"Ball-Band" Light Weight Rubbers for street wear in Men's, Women's and Children's sizes. Ask your dealer. Look for the Red Ball on the sole.

Our freebooklet "More Days Wear" is yours for the asking. In case your dealer can't supply you let us know.

Mishawaka Woolen Mfg. Co.
305 Water Street
Mishawaka, Ind.
"The House That Pays Millions for Quality"

IWAN POST HOLE AUGER

Digs post holes faster than the man behind can set posts, without hard backbreaking labor. Digs wells also.

The two interlocking **sharp crucible steel blades** easily cut through any soil.

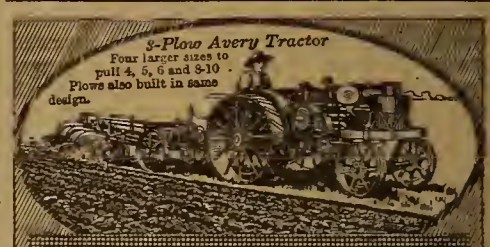
DIGS QUICK AND EASY

and saves time and trouble. Don't be imposed upon. Refuse the poorly made, flimsy imitations. A poor tool is dear at any price. Reliable dealers sell the original, patented, "guaranteed Iwan" for only $2. It pays for itself in one day's work.

WRITE FOR FREE BOOK

about Iwan Post Hole Diggers, Sickle Edge Hay Knives, Ditching Spades, Drain Cleaners, Tile Hooks, Chimney Tops, Ventilators, Etc.

IWAN BROTHERS
1509 Prairie Ave., South Bend, Ind.



Six Reasons for Avery Tractor Success

THERE are more acres plowed by Avery Tractors and Plows than by any other make. These are some of the reasons why so many men are buying Avery Outfits:

First—Special sliding frame which makes possible the elimination of the intermediate gear, shaft and boxings. An Avery Tractor has the least gears, the least shafting and the least bearings of any two-speed, double-drive tractors built—which means more power and longer life.

Second—Two rear drive wheels and two speeds—a big advantage over single-drive and one-speed tractors.

Third—Slow-speed, heavy-duty opposed motors—not high-speed, light automobile motors.

Fourth—Crankshafts are one-half the diameter of the cylinder or more. There has never been a broken Avery crankshaft.

Fifth—Motors have renewable inner cylinder walls. These parts, which are subject to the most wear, can be replaced without buying entire new cylinders

Sixth—No pumps and fans.

Complete Outfit—Tractor, Plow and Thresher—Built and Backed by One Company

A company with a large factory and many branch houses, which insure prompt and permanent service. Avery Plows in all sizes from 3 to 10 bottom. "Yellow-Fellow" Separators in sizes to fit each size tractor.

Prices—3-plow Tractor, $760 cash; 4-plow, $1120 cash; 5-plow, $1680; 6-plow, $2145; 8-10-plow, $2475. Special small size tractor, $295.

Write for new 1916 Avery Catalog

Avery Company, 1067 Iowa St., Peoria, Ill.

Ask for address of nearest Branch House or Jobber

AVERY

One Man Outfits 6 Sizes Fit Any Size Farm

House for Small Farm

An Experience With New Styles of Buildings

By D. S. BURCH

AS WAS our custom before making a purchase of considerable size, we wrote for bulletins, catalogues, and literature, from various sources. In a week's time the literature began to arrive, and the postman developed a knowing grin as he continued to bring the house-building mail.

There were portable buildings, substantial houses to be made of lumber all cut to fit at the mills, and of course plans of houses built in the ordinary way. The appealing things about the cut-to-fit houses were the pictures of homes already built, knowledge of exact cost, and the high quality of hardware and sundries—all of which were included in the definite purchase price given.

At the time we were living in an unsatisfactory rented house in the city. Our building site was to be a tract of an acre and a half near a traction line and five miles from town. One evening my wife had a great plan.

"Let's get one of these portable garages," she said, "and live in it a while until we can decide the house question. The garage will cost no more than four months' rent, and by fall it will pay for itself."

So, the next day we ordered it, ten days later it came, and on the eleventh it was up.

Important Things to Specify

On the twelfth day after our order, which was the Fourth of July, we moved in with necessary furniture, the rest being stored. Before evening a transplanted honeysuckle had its tendrils tickling the eaves and, together with awnings, it was an agreeable temporary home, though only twelve by fifteen feet in size.

In a few weeks we had a well dug, some grading done, and a garden growing. By the first of August we had practically decided on a house plan, which was a composite of several houses from various catalogues. It was not a cut-to-fit house because we could not find a plan that exactly suited us, though I have learned since that some of the companies will modify their plans for a very small extra charge. But even in deciding that we would have our house built by carpenters in the ordinary way, we believed in the cut-to-fit idea. So we accordingly decided to incorporate in our home various complements of the cut-to-fit system, such as cupboards, cabinets, furnace, and plumbing, except the soil-pipe stack, which of course had to be built in with the house.

As a result we secured a very favorable contract figure from a local development company, and saved in the neighborhood of $500 by this plan. To those who enjoy working with tools and building bit by bit at their leisure, I can heartily endorse this system. But it would not do for those who seek their pleasure outside of their home, and who take neither pleasure nor pride in seeing it develop under their hand.

This house is a cut-to-fit building. It is proving itself satisfactory

We had lived in ten houses in four different States and thought we would make no important omissions in specifications. We made plenty of them, but fortunately corrected them in time. Among the things that should always be included are:

That no painting be done in cold or damp weather.

That floors be covered with building paper, well battened down, before plastering.

That plastering be done close up to all window and door casings so as to make a tight job and keep out the wind.

That glass be clear and double-strength, unless you can afford plate glass, which is the best.

That galvanized nails be used for shingle work.

That all nails be set and the heads puttied over.

Some of these points we had learned from the sad experiences of friends who had already built, but most of them we gleaned from the catalogues. Here let me say that even a slight knowledge of building is vastly better than none, and workmen will be less likely to take advantage of you on other things.

Most workmen understand their business and know how a job should be done; but, as some have frankly explained to me, they have their own living to make and cannot afford to do any more than is required. And when they are working on a contract secured by lowest bid, even the best workmen will slight definitely specified work when supervision is lax.

Our house was to be a six-room shingled bungalow in the $2,500 class, with cellar under all of it, and with an up-stairs large enough to make three nice rooms. We had a poured concrete foundation chiefly because it is so smooth and clean on the inside. When considering the main construction we found that ordinary matched drop siding would cost about $40 less than the construction we selected. Our wall consists of tongued and grooved sheathing on the building, then building paper, and over that clear

Our portable garage made a summer home for three while house was building

cedar shingles laid five inches to the weather.

We also specified a concrete porch, which will never wear out, requires no painting, and is easy to keep clean.

The framing lumber, floors, and interior finish of the house are yellow pine, which is strong, durable, and takes a nice sand finish. Besides, it takes oil stains and paint nicely. Outside window and door casings are cypress. We selected birch for the inside doors to give some relief to the yellow-pine finish. Our idea throughout was to have simplicity predominate over gingerbread effects, and the result has been satisfactory. We had the top of all the baseboards beveled off so as not to collect dust, and for easy housekeeping it is hard to beat a one-story house with plain finish.

Most of the inside woodwork and floors are stained, shellacked, and waxed.

We believe further that in outside painting too much contrast in the trimmings spoils many a house otherwise attractive. For the roof we selected asphalt shingles surfaced with crushed slate.

About Laying Asphalt Shingles

We had previously used roll roofing made of the same material, and found it serviceable. But this kind of roofing, either in rolls or shingles, should not be laid in hot weather because the heel of a heavy shoe will gouge the surface when it is soft from the heat.

We had some trouble in getting good window glass. Half of the glass delivered on the job had numerous waves, irregularities, and bubbles, so we sent it back. The concern furnishing it argued that clear double-strength glass such as we had specified was impossible to secure, and one of the men said that he had been in business thirty years, and that he knew—which of course implied that we didn't. But an inspection of a cut-to-fit house built by a neighbor showed us that good clear glass was not impossible, and in the end we got it. It is a satisfaction well worth the trouble to look out of the windows through absolutely clear glass.

The cut-to-fit house I have just referred to is a decided success. Though started two weeks later than ours, it was finished a month sooner. It all came at once in one car, and there were no delays in waiting for material. The pieces were plainly marked, and they went together without sawing.

In our own house we used some of the newer developments along building lines. Among them are a disappearing stairway, which saves valuable space, a colored concrete hearth, marked off in tiled effect, and a pipeless furnace which is enclosed in a brick jacket and is highly satisfactory. It responds quickly, gives a great volume of heat, and when you install it yourself costs about half as much as the usual hot-air installation.

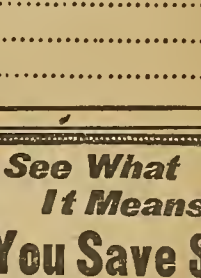
W

Barrett's Money Savers for Farmers

Practical Parables

A FARMER went forth to inspect his farm. It was near the end of his fiscal year and albeit he thought he had left nothing undone he found that things were not as should be. His stock was lean, nervous and not yielding great profits. His fences were straggling and ready to fall, having rotted in the posts. His harrow and certain expensive implements were rusted for he had not painted them. His barn admitted water at the roof, and likewise his own home, and that of his poultry. And the little gutters that should carry the water from roof to ground did leak too and were in sore need of repair. And even more so, the roofs on his many buildings which had cost much gold and labor, were not attractive nor yet durable. So the farmer was exceeding downcast. And it came to pass that a more successful neighbor came unto him and said:

"THE greatest enemies to live stock and poultry are lice, mites, vermin and flies. I keep my live stock clean and happy by spraying them with Barrett's Creonoid and I spray my roosts regularly. It is the most economical and effective animal antiseptic I have ever seen and I've tried them all. All you have to do is spray your stock once or twice and their pests will go away, leaving your hens, cows, pigs and horses healthy and happy. There are many other valuable uses for Creonoid and you had better ask The Barrett Company to send you their booklet on the subject. Don't delay when the solution of your problem is so easy.



"I USED to help the Farm Machinery Company pay dividends until I was advised to try Barrett's Everjet Elastic Paint. You see metal seldom wears out; it rusts out and Barrett's Everjet positively prevents rust. It never peels, scales or cracks. There is more merit in Everjet than I can tell you of. Everjet is especially recommended for use on 'ready roofings' because of its low price and great covering capacity. Protect your roofs and machinery with Everjet.

Barrett's Grade One Liquid Creosote Oil

"YOUR wooden fences would have been good for twenty years if you had painted the buried parts of the posts with a good wood-preservative. Why not do it now? Get some of Barrett's Grade One Creosote Oil. Tests have shown that it is the best wood-preservative on the market because it penetrates deeper and lasts longer than any other. You can't beat creosote for insuring the life of the wood. Barrett's is the best creosote. That company is the greatest producer of coal tar products in the world. Tell them your wood decay troubles. They'll show you what to do.

EVERLASTIC ROOFING

"IF YOU are not satisfied with your roofs, or want a covering that will keep wind and water out permanently, at low cost, you should try Barrett's Everlastic Roofing. There is no better 'Rubber Roofing' on the market. It is inexpensive, easy to lay and gives excellent service for years. Just the thing for outbuildings. Made in one, two and three-ply weights. The rolls are 36 inches wide. You need some Everlastic Roofing.

TYLIKE Shingles

"THEN there is a product you ought to have just on general principles. As an aid in quick repairs, Barrett's Elastigum Waterproof Cement is a wonder. And it repairs permanently too. Just the thing to join and reline gutters, whether wood or metal. It seals leaks and joints and is unbeatable for flashings around chimneys.

Just check the booklet or booklets you want and return the coupon to us.

"AND now let me tell you about the beautiful Tylike Shingles, made of crushed slate laid on a tough waterproof base. Laid like slate but cost less and look better. Made in red or green with wonderful velvety finish. They are used on handsome bungalows and cottages. The aristocrat of roofings at a cost that will surprise."

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12 in. Double Shin S. B. Plow

with Extra Share, all Soft Center. Highly tempered and polished in oil. 13" Rolling Coulter ordered with plow $1.00 extra.

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All goods absolutely guaranteed. If not satisfied, you get your money back. We don't want your money if you don't want the goods.

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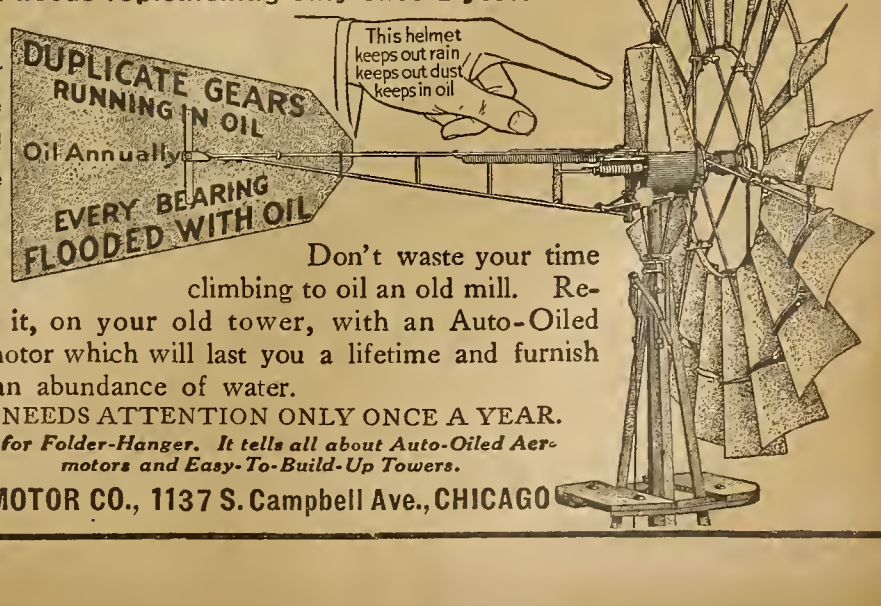
The only Plow Factory selling a full line of Implements direct to the farmer at wholesale prices.

Auto-Oiled Windmill

ALL WORKING PARTS INCLOSED

and flooded with oil from the supply in the gear case, which needs replenishing only once a year.

Put your old Aermotor wheel and vane on this self-oiled motor, and have an up-to-date outfit at small cost.



Don't waste your time climbing to oil an old mill. Replace it, on your old tower, with an Auto-Oiled Aermotor which will last you a lifetime and furnish you an abundance of water.

IT NEEDS ATTENTION ONLY ONCE A YEAR.

Write for Folder-Hanger. It tells all about Auto-Oiled Aermotors and Easy-To-Build-Up Towers.

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$615 Overland

TRADE MARK REG.

Model 75—Roadster $595—f. o. b. Toledo

Never Before Such An Instantaneous Success

From every state in the Union we hear of the amazing success of the latest Overland—the $615 model.

At the New York and Chicago Automobile Shows—the two great national automobile events of the year—the $615 Overland was the most widely discussed model exhibited.

And why not? An electrically started and electrically lighted completely equipped Overland with four-inch tires for only $615!

Is there any wonder this car took the whole country by storm?

Season after season for seven years we have experienced one great success after another.

But this one tops them all.

No other achievement in the history of the entire industry parallels this record.

It stands out alone — boldly — conspicuously — unapproached.

Never before has an automobile success been so rapid, so definite and so sweeping.

The $615 Overland has made history. It marks the entrance of a new automobile value—a car complete in every sense of the term at a price which was hitherto thought impossible.

Yet here it is—a powerful five-passenger touring car complete for only $615.

Note that word "complete."

This means electric starter and electric lights, electric horn, magnetic speedometer—in fact, every necessary item. Nothing is lacking. There are no "extras" to buy.

Note that the motor is the very latest en bloc design—the last word in fine engineering.

In addition note that the tires are four-inch size. This is another big advantage. Many cars costing more have smaller tires.

Note that the rear springs are the famous cantilever type. Another advantage. Cantilever springs mean the utmost in riding comfort.

Note the headlight dimmers—the electric control buttons on steering column—demountable rims and one-man top. These are all big advantages.

This newest Overland is light in weight, easy to handle and very economical to operate.

It's just the car the world has been waiting for.

It is large enough for the whole family—moderately priced, within the reach of the majority—economical to maintain—built of the best quality materials—snappy, stylish and speedy—and complete in every sense.

In short, it is just another striking example of how our larger production enables us to build a bigger and better car and still keep the price within reason.

You'll want one, so order it now.

Don't wait, debate or argue with yourself. See the Overland dealer and place your order immediately.

Then in a few days you and your whole family will be driving your own car.

Remember it comes complete—only $615!

Catalogue on request. Please address Dept. 575.

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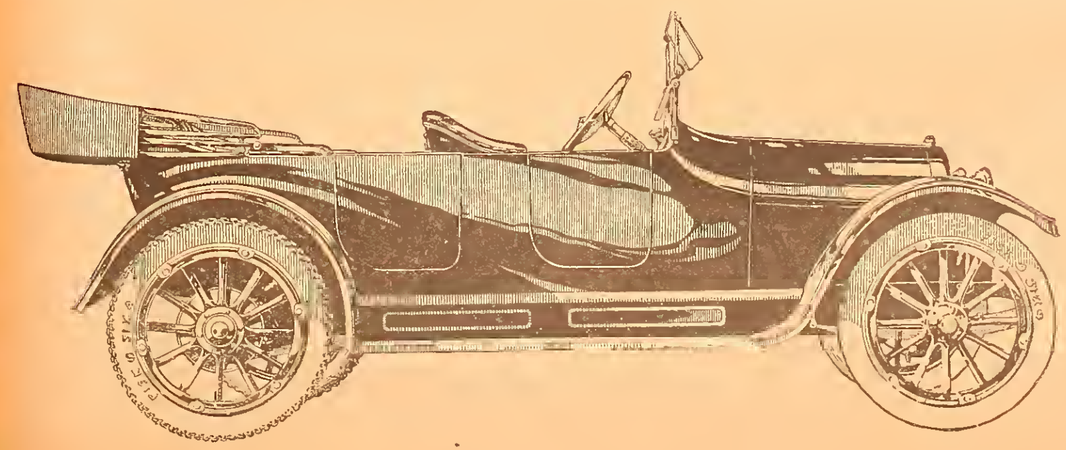
"Made in U. S. A."



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NEW LOW 1916 PRICES--only $18.95 now for a longtima guaranteed gasolina engina. Proportionately low prices on Lifetima Guaranteed 1 1-2, 1 3-4, 2 3-4, 4 1-2, 6, 8, 12 and up to 50 H. P. Engines. No better engines at any price, powerful strong, simple. Easy to run. Many being used in yonr neighborhood. Don't buy until yon write for our great special Free Gasoline Engine Catalog and read our wonder 60 DAY FREE TRIAL WITHOUT MONEY to us in advance offer.

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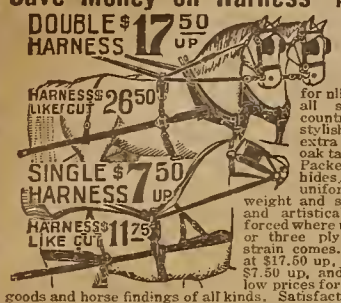

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30 DAYS FREE TRIAL

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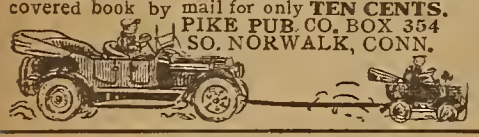

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From NOW Till Seeding Time

This extra offer is made with the idea of getting **ten or more Genuine Galloway Spreaders** in every township in the **next few weeks!** One Galloway No. 8 always sells from one to a dozen more! I make this new special offer to get **10,000 advertising spreaders distributed quickly,** which will build up an **enormous** amount of summer and fall sales.

I sell on terms to suit you. Six different selling plans, including one year to pay installment plan, note settlement, half cash, half note, bank deposit or cash, at prices so low you cannot afford to do without a manure spreader. We sell direct, at less than wholesale, from factory to farm at the actual cost of labor, actual cost of material and only one small profit, based on tremendous output.

PRICES LOWER ON SPREADERS NOW

Get in on this special distribution advertising offer from now until seeding time. At the end of twelve months, if the Galloway Spreader has not paid for itself, if you have hauled out a hundred loads of manure or more, and it has not proven everything I say for it, I agree to take it back, pay freight both ways and return your money, no matter on which plan you buy. Could I make this offer if I was not sure of my ground? Every sale backed by a $25,000 bank bond—an additional guarantee to you!

New Steel Beater and Wide-Spreading V-Rake
Pulverizes and Tears Manure to Shreds
Worth $15.00 on any spreader; costs you nothing extra on Galloway. Over 50,000 in use. **Invincible, Irresistible patented roller feed.**

Patented Automatic Stop, Uniform Clean-Out Push-Board
Worth $10 On Any Spreader
Exclusive but costs you nothing extra on the Galloway Spreaders.

This great exclusive feature on the Galloway Spreader is what makes it superior to all others. It's a secret of our light draft, because the perfect mechanical principle used here is exactly the same principle as moving a house on rollers. This feature alone is worth $25 on any spreader. Exclusive on the Galloway, but costs you nothing extra. Don't buy a spreader of any make or kind until you have tried a genuine Galloway at our risk without obligating yourself before trying.

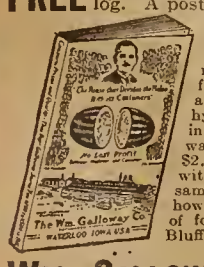
New Everlasting Pressed Steel Unbreakable Tongue
Worth $5.00 More On Any Spreader
No extra charge on the Galloway.

30 Days' Field Trial And Returnable To Us Within One Year If Not Perfectly Satisfied

READ THIS

MANURED! I wish you could have seen this field year before last and the poor crop on it! Here is an actual photograph of a corn crop grown in the fall of 1915 after an experiment by using an application of manure. The other photograph shows part of the identical field taken the same day, but that part of the field was **not manured.** The increased crop of corn from this field amounted to over $17 per acre where manured! Figure it out on 20 or 40 acres or on your own field.

New 1916 Book FREE Get this big, new catalog. A postal gets it.



250 pages. Printed in four colors. It tells how to handle manure with the least labor—how Galloway made spreaders famous—how a run-out, unproductive farm was turned into a "gold mine" crop producer—how to build a manure pit to preserve fertility—how to increase your corn crop from $10 to $15 per acre—how a Galloway spreader will pay for itself in one year by increasing crop profits and leave money to put in the bank in the fall—how we save you $25 to $45 on a spreader—how Galloway, right from the farm, a few years ago started and built up a $2,000,000 industry by selling direct from factory to farm—how with a 20-lb. steel malleable feed mechanism, we accomplish the same results as others do with 400 pounds of brittle gray iron—how a Galloway spreader handles easier with two horses instead of four horses. Spreaders are shipped from Waterloo, Council Bluffs, St. Paul, Chicago and Kansas City.

THEN THIS

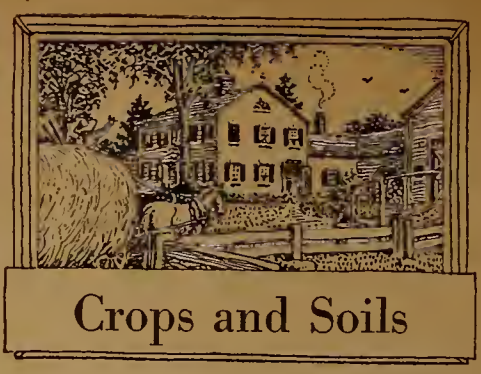
NOT MANURED! This picture was made on the same day as the opposite photograph. It is in the same field but not manured. It had been cropped to death! This field was in exactly the same condition as the other field, planted the same day, cultivated the same way, grown from the same seed, by the same man, but was **not manured.** A Galloway manure spreader will positively pay for itself in one year if you have a hundred loads or more to haul—and leave you money besides! Read our special 1916 proposition in this ad, and the complete story of this experiment in the new 1916 big catalog.

OTHER 1916 FEATURES

IMPROVEMENTS In addition to our exclusive patented roller feed, automatic stop, uniform clean-out, push-board, the everlasting heater and V-rake, we have many other valuable features including pressed steel tongue; double chain direct drive from rear wheels; endless apron with force feed; frame work of channel steel, trussed like a steel bridge; cut under front wheels, short turning; extra light draft; two horses will do with this spreader what it takes three or four to do with other spreaders; seat folds forward out of the way when loading; 60 to 70 bushels capacity but so constructed that manure can be piled 18 to 20 inches above the top of the box and the spreader will successfully handle it.

Remember we manufacture this spreader in **our own factories** and sell it *direct* to you from *factory to farm.* This spreader should *not* be compared or confused with other low-priced spreaders that *do not have* the special exclusive patented features and genuine merit (backed up by tens of thousands of *Galloway* spreader users) that is found in the *Galloway. Beware* of cheap, absolutely worthless imitations of the *genuine Galloway. Beware* of imitations at any price. Get a *genuine Galloway* and you will be *safe.*

WM. GALLOWAY, PRESIDENT, THE WM. GALLOWAY CO., 399 Galloway Station, WATERLOO, IOWA
Manure Spreader Manufacturing Specialists



Crops and Soils

Formalin Does It

WHEAT, oats, and barley, as well as many other less important crops, frequently yield less than their breeding would indicate because of smut. This smut forms in the grain as the seed is developing, and when the crop is ready for harvest, instead of kernels, the farmer finds a black mass.

The cure is prevention, and that must be cared for before the seed is sown. The closed smut in wheat and the open smut in barley must be treated with hot water, but the other smuts in the small grains can be successfully handled with formalin.

Thoroughly mix 16 ounces (one pint) of formalin in a tank or barrel containing 30 gallons of water; put your seed in a gunny sack and dip it into this solution. Soak it good for a few minutes; take out the grain and allow it to drain for a few minutes; then empty the grain on a clean floor and cover with wet sacks or with a canvas for an hour. Treat the grain at least half a day before sowing, in order to give it time to dry.

If you prefer you can spread the seed grain on a clean floor and spray the seed with a common sprinkling can or, still better, with a small force pump, which will throw an even spray. It should be shoveled over and over until the seed is thoroughly moistened, then cover with a few sacks or blankets for an hour. Allow seed to dry before sowing.

Sixteen ounces of formalin in 30 gallons of water will treat 40 to 50 bushels, and should cost 30 to 35 cents. Be sure that the formalin is of standard quality.

Big Beets on Trial

THIS picture, furnished by an Iowa reader, shows the result of his trial with mangel wurtzels, or cow beets. This field yielded at the rate of 60 tons per acre, and sold to a near-by dairyman

at 20 cents per bushel. The beets were drilled in rows 24 inches apart, and thinned to 12 inches in the row. The crop had just ordinary care. Some of these beets weighed 20 pounds apiece.

Fields Rid of Stumps

By Thomas Stevens

I FIRST used dynamite for blasting standing trees in 1883. Had to pay $32 for my first 50-pound box of it. I have been using it ever since. There is hardly a farm in this section that I haven't helped to clear.

Everywhere one goes stumps are still to be seen on the farms, and I believe the farmers would like to get rid of them if they thought it could be done at reasonable expense and without too much hard work. An ordinary stump, with its spreading roots, will occupy 400 to 600 feet of space. If the soil is good the crop that can be realized on the ground will pay the cost of clearing in one good season.

A good many men fail as stump blasters because they do not make a study of root formations of different kinds of trees and of soil conditions, and types. They try to blast out a tap-rooted pine in the same way they would tackle a lateral-rooted oak or willow: they try to use the same kind of explosive for loose, sandy soil, and the same size of charge that they would use in heavy clay soil: they try to dispose of a deep-rooted stump in the same way they would go after a shallow-rooted one. Is it any wonder they fail?

I have found that a small tree or stump may be blasted by a charge in a single hole, put down at an angle of about 45 degrees to a little beyond the center of the stump and two to three feet deep, and using one to three sticks

of dynamite. But no iron-bound rule will apply. Every stump is an individual problem, and must be handled according to existing conditions. Only experience and study will make one an expert in this work, although fairly satisfactory results can be got by a beginner if he uses "horse sense."

A stump two or three feet in diameter may require two, three, or four holes under it to dispose of it right. A blasting machine and electric blasting caps must be used if distributed charges are made use of.

For large green oak stumps, three to six feet in diameter, I drive a pointed bar down at an angle of 30 or 35 degrees until I get under the center of the stump, load the hole with half a stick of dynamite, and blast. This makes a pocket or chamber in which I then load the main charge as soon as the hole is cool. I then place additional holes out around the edge of the stump, getting them down under the main lateral roots. One or two sticks of dynamite are loaded in these side holes; in the center hole the charge may be anywhere from three to eight pounds, according to conditions. This method of charging makes a blasting machine necessary, because in no other way can the charges be made to go off together.

Tap-rooted pines and hickories must be dealt with differently. Many drive a bar down at an angle of 45 degrees against the tap-root, then bore into the root, about two thirds through it, and load the charge in the wood. This is a very good method, but takes more time than my way. I simply drive the bar down to the tap-root, then place half a cartridge charge right against the root. This shot shatters the root and makes a fine chamber into which I load my main lifting and bursting charge.

Seeing a stump in a cultivated field has about the same effect on me, I guess, as the red flag is said to have on his majesty, the bull. It makes me mad. I want to go right into that field and get my horns under the stump and throw it over the fence.

Add New Granges

THE National Grange Patrons of Husbandry has added 542 new subordinate organizations to its list during the last year. Kansas led with 90 new Granges, Two thousand new Granges in 32 States have been organized in four years to swell the strength of this rural force.

Overhead Irrigation

By D. S. Burch

A GOOD deal of attention is now being given to spraying field crops not only for pests but to keep down weeds. The selection of nozzles is important if you expect the best results. A nozzle for hoed crops is now made which will concentrate the spray on the plants when they are small, but later on when the crops have grown the same nozzle can be made to spread out the spray to cover all the foliage. The success of weed-killing by spraying is due to the porous, spongy structure of most weeds and the more glossy leaf surface of the grasses and grains. The weeds absorb the poison, whereas the grains and grasses do not, relatively speaking. Iron sulphate, a by-product of the steel industry, is the chemical most used.

Another form of spraying is with ordinary water for irrigation. One gardener of my acquaintance who uses this method speaks very highly of it. He uses it in his greenhouse all the year around, and in his fields from about the first of May till all danger of drought is over. The greenhouse is piped, and the water supplied under a pressure of about 60 pounds per square inch. Nozzles spaced three feet apart all along the pipes throw the water in a misty spray. By a simple turn of the pipes, any angle of the spray may be secured. When I saw this outfit in operation he had half an acre under glass, and the outfit which he has installed himself with the help of his sons cost him about $100.

"I save $50 worth of greenhouse space every year," he said, "because I do not have to leave any passageways through the beds for watering. Besides, I save so much time. All I need to do is to turn on the spray, crank the engine, and in an hour or two stop it. The water falls in such a fine mist that it doesn't splash the dirt into the heads of my lettuce.

"I bought the nozzles, which cost me from 5 to 8 cents apiece," he explained, "and drilled the holes for them myself in ordinary three-fourths-inch pipe.

"Two-inch mains will supply enough water for 150 feet of the three-fourths-inch pipe with nozzles. I use a 1,000-gallon compression tank, and a 2½-horsepower engine to do the pumping. To satisfy my curiosity as to how much water comes out of one nozzle, I held a quart cup under one of them. It took just 55 seconds for it to fill. That gives an idea how fine the spray is."

The Next Issue News

Volume I — Farm and Fireside Editor's Office — *Number 8*

When You Buy an Automobile

A garage owner and an expert mechanic who has bought, sold, repaired, and driven automobiles for many years, a man who has obtained an almost endless amount of helpful information valuable to owners and prospective owners of automobiles, has written an article for our readers, entitled "When You Buy a Motor Car." The article tells what it costs to operate a machine, and how to increase its usefulness. It will be printed in the next issue of FARM AND FIRESIDE, the March 25th number.

To Drive Machines with Skill

How can a young girl who doesn't know a crank shaft from a carburetor run an automobile with such grace and skill and freedom from engine troubles? How can a man with no mechanical ability whatever drive a machine miles away from a garage and help? It is because—well, it's all in the next issue.

Going to town quickly

Next-cover picture

How to Build a Home Garage

If you are planning a garage, or have one now, you will be interested in the article on home garages in the next issue. It tells where to build, the size garage to build, the material to use, the kind of tool bench to use and where to place it, the tools you will need, the kind of floor, and many other helpful things you will be glad to know.

Couldn't Get Along Without a Car

"Speaking with my boy about the practical value of the automobile we have had on the farm for the last five years," writes a contributor in the next issue, "he smiled a little bit and said, 'Well, I wouldn't know how to get along without it!' Now that about sums the matter up right. And even though gasoline is high-priced we find that we can run our car as cheaply as we can keep horses to do the same traveling, and we don't spend so much time on the road." It is an interesting farm experience.

Painting the Car to Look Like New

The unusual mirror-like finish of the new car is due to the best facilities at the factory, and to the material used. Of course, the amateur who desires to put a new finish on an old car can hardly expect to produce the same result as the factory, but with the proper care he can look for a satisfactory result. How this can be realized at a very small cost and with some trouble is told by a motor-car expert in the next issue, the March 25th number.

If You Have Stomach Trouble

"I have been bothered with stomach trouble for five years; I have a bad taste in my mouth; I have sparks and black specks before my eyes. My tongue is thickly coated white. I have been told that the nerves of my stomach are affected badly." Thus one of our readers describes her case. Dr. David E. Spahr prescribes a treatment for stomach trouble in the next issue.

Where the car is kept

An outward indication of inner quality
RED SIDE WALL AND BLACK TREAD
THE TRADEMARK OF
Firestone
NON SKID
TIRES

Big Stumps Out Quick And Easy With A Kirstin
Lowest Cost On Record
One-Man Stump Puller
Save Money On Land Clearing
Clear your land the easy, practical, economical way—the KIRSTIN One-Man way. The KIRSTIN costs little—holds record for low cost of operation—costs nothing for upkeep. One Man handles and operates with ease. The Powerful Improved
Kirstin Double Leverage Cable Model
with its Multiple-Speeds, Short Lever, Quick Detachable Connections, Auto Release, etc., is the most wonderful and efficient land clearing device you ever saw. Write today for big new catalogue, "Absolute Proof," and special limited time prices. You want your land cleared the best, quickest, cheapest way. A KIRSTIN will do it. Our free catalogue and booklet tell how. Don't wait—write now.
A. J. KIRSTIN CO., Escanaba, Mich.
6329 Ludington St.
51

Lowest Prices Ever Made on World's Best ROOFING

Absolute "rock bottom" prices have now been reached on the greatest roofing. Don't invest a cent in new roof covering, siding or ceiling for any building until you first get Edward's wonderful freight prepaid money-saving offer direct from the world's largest factory of its kind.

Reo Steel Cluster Shingles

EDWARDS Tightcote Reo Steel Shingles

Spanish Metal Tile

Edwards Patent "Grip Lock"

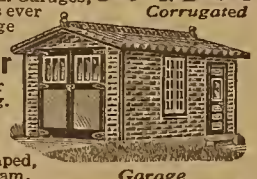
outlast three or four **ordinary** roofs—yet they actually **cost less!** No painting or repairs necessary; rot- fire- weather—rust-proof. Insurance cost is less because Edwards guarantee their roof against **lightning.** Easy to lay—no special tools needed.

Every sheet of Edwards Galvanized Steel Shingles, Roofing, Siding, Ceiling or finish is extra heavy galvanized, piece at a time, by our exclusive **Tightcote** patented process after sheet has been stamped and resquared. Side and edges are as heavily galvanized as body of sheet. Means no weak spots to rust and corrode. Edges and nail holes can't rust.

Corrugated

Garage $69.50 Up

Wide variety, many styles, all sizes of Portable, Fireproof, Metal Garages, $69.50 and up. Lowest prices ever made. Postal brings 64-Page Garage Catalog—FREE.



Garage

Freight Prepaid Offer

on the lowest prices ever made on world's best roofing. We make and sell direct from biggest factory of kind, Edwards Reo Tightcote Steel Shingles, V-Crimped, Corrugated, Standing Seam, Painted or Galvanized Roofing at bed-rock bargain prices, saving you all "in-between" middlemen's profits. Write for Free Roofing Samples and your copy of Roofing Catalog No. 35

The Edwards Mfg. Co.,
308-358 Pike Street,
Cincinnati, Ohio

WORLD'S GREATEST ROOFING BOOK

Note construction of Patent Interlocking Device protecting nail heads from the weather and making the roof absolutely water-tight.

SPECIAL OFFER COUPON

The Edwards Mfg. Co.,
308-358 Pike St., Cincinnati, O.

Please send FREE samples, Freight-Paid prices and World's Greatest Roofing Book No. 358

Name.....

Address.....

Largest Makers of Sheet Metal Products in the World.

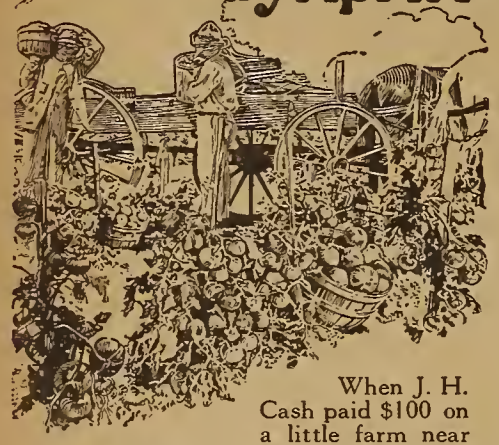
BIG MONEY IN FRUIT

Replant your orchard. Plant your roadside. Hardy fruit trees, vines and shrubs at low **WHOLESALE PRICES NOW**

Direct to you from our nurseries. Big 4-color, new, different, original fruit book and planting guide FREE.

GALLOWAY BROS. & CO.
Dept. 396, Waterloo, Iowa

A crop harvest by April 1st



When J. H. Cash paid $100 on a little farm near Camden, Ark., he had just $40 left—yet in three years he cleared his debts and bought 80 acres more. It's easy to understand why farmers along the

Cotton Belt Route in Arkansas & Texas

make headway so fast when you consider the soil and the season down there. When farmers up north are "drawing on the bank" for living expenses, Mr. Cash, and thousands of others in Arkansas and East Texas are **cashing in** on crops. Mr. Cash sells garden truck by April 1st; by the 15th he's marketing new potatoes; by May it's strawberries and there's some crop to sell every month until Christmas. He's made five crops bringing $537 per acre in one season.

And the crops are not all truck or fruit. Corn, peanuts, clover, alfalfa, etc., yield big. Mr. Kapp, near Cash's place, makes 62 bu. of corn on his land. Mr. I. Z. Zimbrough of New Edinburg, Ark., makes 100 bu. of peanuts per acre, selling at $1 per bu. Rudy Stutter, of Stuttgart, Ark., says: "I plant oats the last of September and in 15 years I've never lost a crop. Last year I threshed out 75 bu. per acre. Jacob Yoder, on the place adjoining mine, made 90 bu. per acre." Near Texarkana, Tex., J. M. Champion shows how a farmer can make $1700 and $1800 a year net on twenty acres by taking advantage of the **many crops per season** which the long growing season allows.

Go where you will in Arkansas and East Texas you'll find farm opportunities even bigger than you've read about.

Two free books!

A farmer wrote them; and he knows what you want to know about a section new to you. They tell about the character and cost of lands, climate, crops raised, etc., and about schools, churches, towns, social conditions. Brimful of photograph pictures taken on the ground. Send me your name and address on a postal card today and get these free books now.

COTTON BELT ROUTE

E. W. LaBeaume, G. P. A.
1849 Railway Exchange Bldg., St. Louis, Mo.

Starting Young Plants

Ways to Protect Them When They Need It

By JOHN COLEMAN

EVERY spring there comes a time when your garden is sure to be late if you don't transplant from hotbed to open ground, and you run a risk of frost if you do. The same problem is met when planting seed in the open. And about every so often the most weather-wise gardeners are caught by a freeze or storm that lasts just long enough to wipe out all hopes and profits for a season.

The pictures show some simple and ingenious devices for nursing young plants through this critical period. These protectors are used by commercial growers as a means of capturing early market, but they are adapted for the home garden as well. The little boxes with a glass front cost from 30 cents to $2.90 per dozen, depending on size and style. This does not include the glass, which costs about as much as the boxes, but which is best secured locally to avoid danger of breakage in transportation. Of course the glass will last a lifetime with good care.

The boxes are made of light cardboard paraffined on both sides. They will last several seasons if not exposed to the weather more than a few weeks at a time, which in most cases is sufficient. Their main use is to shelter young plants against frosts, cold winds, and late snows, but in addition they have been found useful in keeping off insect pests. By the time the plant has outgrown the forcing box its growth is vigorous enough to resist many pests and outgrow most of the damage.

The muslin-covered frames are used for shading newly set tomato plants, melons, cucumbers, cabbages, and similar crops.

One week under one of these protectors will usually prevent a tender plant from wilting or losing valuable growing time. After that time the protector is removed during the day, and is kept near the plant for emergency use should frost threaten.

Some muslin protectors, nine inches in diameter and a foot high, cost as much as 21 cents apiece in dozen lots; but, of course, this price as well as the price on paraffined forcing boxes can be greatly reduced when the articles are purchased in lots of a hundred or more.

The care that is used in the manufacture of these protectors of various kinds is an indication of the value that they may be in the garden when properly used.

The three bottom prongs of this plant protector serve as an anchor, and enable it to resist wind and driving rain. The chief use of this device is to protect small plants against frosts, hot sun, and insect pests

Each of these little glass-covered forcing boxes shelters a tomato or cantaloupe plant that is getting an early start. This picture shows just part of a ten-acre field

This odd-looking scene is a field of tomatoes, each plant having its individual protector made of wooden hoops covered with muslin. The protectors can be nested for storing

This plant-forcing device is virtually a little greenhouse. It is made of cardboard and has a glass front. Wires pressed into the ground hold it securely

The Man with the Wheel Hoe

By Smith Drake

THE man with the hoe was a solemn old chap
Who's famous in art all over the map;
He grubbed in the soil, and so did his wife;
They never looked up to the good things of life.

The man with the hoe is, of course, long since dead;
His place has been filled by the man with a head
Who thinks as he works and shoves his wheel hoe,
And then takes a rest to watch the crops grow.

Tons of York Imperial

APPLE TREES that bear a ton or more of fruit from a year's harvest are not plenty.

A York Imperial, about fifty years old, on the Dadisman farm near the northern boundary of West Virginia, produced 65 bushels of apples in 1912, and 60 bushels in 1914, of marketable size and good quality.

For the past five years this tree has been sprayed once every year, just after the blossoms fell. But little pruning has been given this tree for eight or ten years.

As would be expected, the tree is very vigorous and well developed, although no fertilizer of any kind has been applied.

Care of the Lawn

A BRIGHT, green, smooth lawn about a house is like a neat dress on a pretty girl. She may be a nice girl and not have it, but her niceness is more noticeable if she has.

Most lawns which are made by sowing the seed are better than those on which sods are placed.

Use plenty of seed. Twice as much as is necessary will do no harm. No lawn was ever seen on which the grass grew too thick.

Sow on a still day, and sow a second time, walking at right angles to the first sowing. This will tend to make the stand even.

After sowing, roll the ground well or beat it flat with a spade.

Spring sowing should be made as early as possible: in the Northern States say from the middle of March to the first of May. From the middle of August to the middle of September is the best time for fall sowing. Nurse crops may be dispensed with unless the sowing is done in hot weather. In the latter case a light sowing of rye or oats will protect the young grass from the hot sun.

Drain wet spots, but moist spots will grow the best lawn.

GIGANTIC TOMATO SEEDS FREE

Here is the king of all Tomatoes, largest and most productive, fruit often weighing 2 to 3 lbs., each, and 100 to 150 lbs. have been grown on one plant. Handsome red color, very smooth, few seeds, solid all through, ripens early. A few plants will produce more Tomatoes than a family can use.

Our Special Offer

We want every person who uses seeds to see our 1916 Seed Book and try this Giant Climbing Tomato. We will send a sample packet in a 10c coupon envelope for trial, with Seed Book Free. This Book describes the best Vegetables, Fruits and Flowers. Send your address today.

MILLS SEED HOUSE, Dept. 20, Rose Hill, New York

SPRAYERS FOR EVERY NEED Bucket—Knapsack—Barrel—Traction and Gas Engine Machines. We make them all. Directions FREE.
Field Force Pump Co., Dept. 15, Elmira, N.Y.

Strawberry Plants

$1.50 per 1000, etc. Best Michigan Stock. 100 varieties including Everbearers, also Grapes, Raspberries and other small fruits. Send today for **FREE Catalog.**
ALLEGAN NURSERY BOX 17 ALLEGAN, MICH.

850,000 GRAPE-VINES

69 varieties. Also Small Fruits, Trees, etc. Best rooted stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive catalog free. **LEWIS ROESCH, Box K, Fredonia, N. Y.**

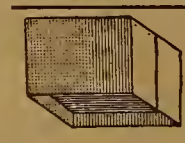
TIMOTHY LESS THAN WHOLESALE

Extraordinary big values. New tested recleaned seed. Quality guaranteed. Sold subject your approval. Lowest prices on Alsike, Blue Grass, Clover, Alfalfa and mixed grass and all field seeds. Samples, prices and big valuable profit-sharing Seed Guide Free. AMERICAN MUTUAL SEED CO., Dept. 342, 43rd and Roby St., Chicago, Ill.

FREE Our handsome 1916 **Seed Catalogue.** Fully illustrated in colors. Reliable seeds at bargain prices. A full line of garden and flower seeds **Cherry's Famous Dependable Seeds,** fresh and reliable, are used by successful gardeners everywhere. Send your name and address on a postal for a copy of our bargain catalog. **SEEDS**
Chas. J. Cherry & Co., 214 Vine St., Rockford, Ill.

SUDAN GRASS 9 1/2 C Per Lb.

Northern-grown—Extra Fine Quality—Very Pure—Free Johnson Grass—High Germination. Do not fail to plant this wonderful forage crop this season. Heavy hay producer; equal to cane—quality far superior. Excellent pasture, not affected by drouth. Cheap to plant and grows abundantly either wet or dry—on all soils—no failure. Write today for circular and 100-page catalog and Free Sample. It will pay you big.
A. A. BERRY SEED CO. Box 1242 CLARINDA, IOWA



Get Low Prices on Berry Boxes and Baskets

Write for our **Free Catalog!** Shows you how you can save money by buying direct from *the largest Berry Box and Basket Factory in the Country.*
New Albany Box & Basket Co., Box 110, New Albany, Ind.

NEW SEED OATS

O.A.C. No. 72, Originated at Ontario Agricultural College and was first choice out of over 9000 tests. These oats have yielded at the Ontario College 114 Candian bushels per acre which is equal to over

121 BUSHELS PER ACRE

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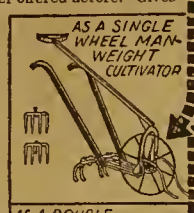

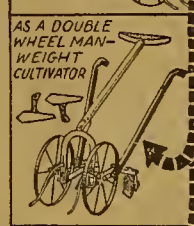

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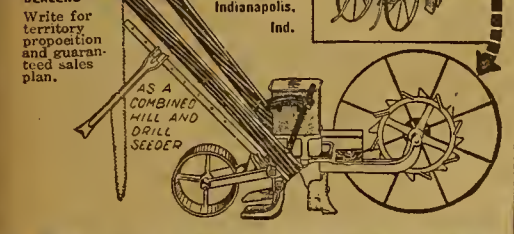

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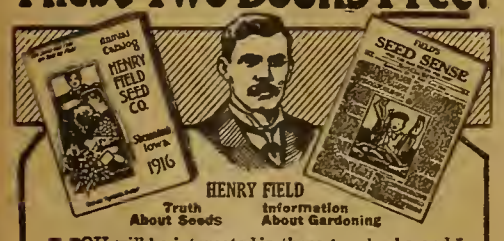

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The bane of the lawn is weeds. They are of two classes—those which will be killed by frequent clipping, and those which will not. Dandelion and plantains are the worst. They may be killed by digging them up—and that is about the best way. Another way which is recommended by some experts is to take a wooden skewer, dip it into sulphuric acid, being careful not to drop any of it on the skin or clothes, and stick it into the heart of the cut-off weed at the surface of the ground.

It doesn't thicken a lawn to let it run up to seed. Keep it clipped, fertilize it, and rake in grass seed to fill up the bare spots.

The favorite lawn mixture is Kentucky blue grass and white clover.

Onions on Small Acreage

By J. W. Mercer

MY BEST small investment was the sum of 90 cents spent for a pound of Italian onion seed. I planted all of it, except about a tablespoonful, on a little less than a third of an acre, and gathered and sold 10,500 pounds of onions at two cents a pound. Thus my 90-cent investment returned $210. But that was not all.

In August of the same year after I had gathered my onions, I planted one third of the same piece of ground in black wax beans, and sold $85 worth of those besides what were consumed at home.

So my total returns were $295 from a one-third-acre patch.

Grow Shrubs in Tubs

By John T. Timmons

ORNAMENTAL shrubs in tubs, such as bay trees, boxwood, evergreens, hydrangeas, and a number of others, should be attended to at the earliest possible time after March 20th.

Of course, much will depend on the weather and the latitude in which you live.

Any repotting that is necessary ought to be done at this time to give the best results.

Do not fail to put plenty of leaf mold in the compost for tub plants, as it is a great help in holding moisture.

In repotting or retubbing these plants, always place plenty of drainage material in the bottom of the vessels, and pot them quite firmly. A solid piece of wood, such as a pick handle, is excellent for ramming the soil.

Tubs which are charred will last much longer. This is done out of doors by placing a cupful of kerosene in the tub and setting fire to it after the tub has been rolled to distribute the kerosene equally. After the fire has burned enough to char the tub well, invert and the fire will go out at once.

Seed 10 Cents; Crop $22

By R. Robinson

WHILE making cheese for a co-operative company in Ontario, I had the use of about a quarter of an acre of ground which I used for a garden. I raised potatoes, cabbage, tomatoes, beets, melons, cucumbers, top onions, and multipliers, but had never raised onions from "black seed," as we called it. So one spring I bought two five-cent packets of Red Wethersfield seed.

My garden spot was a nice, dark, sandy loam which I had made rich by repeated applications of manure from the company's hog pens. When ready to plant I dropped the seed into warm water and let it soak overnight, then prepared a small piece of ground, and with a string lined off the rows nine inches apart.

Next I made shallow furrows with the point of an old gambrel stick, sowed the seed, and covered it with the back of a rake.

When the onions came up they were so thick that we had green onions all summer while thinning them out. Well, that bed of onions got to be the talk of our neighborhood. Factory patrons told about it, and people came from all directions to see it. I attended to the cultivation, using the hoe freely as I worked backwards between the rows till you could hardly find a weed with a magnifying glass.

At our township fair in October I took first prize on onions, which was $1. Later I harvested and sold 21 bushels at $1 a bushel, gave away more than a bushel, besides a two-bushel sack full of thick-necks which were saved for our own use.

Here was a cash return of $22 from ground that was only 21 feet square, besides having onions galore for our own use.

The yield was at the rate of 2,300 bushels per acre.

I have often tried to raise another such crop since, but never could come anywhere near it.

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No. 25 Planet Jr Combined Hill and Drill Seeder, Double and Single Wheel-Hoe Cultivator and Plow is a splendid combination for the family garden, onion grower, or large gardener. Is a perfect seeder, and combined double and single wheel-hoe. Unbreakable steel frame. Capacity—2 acres a day.

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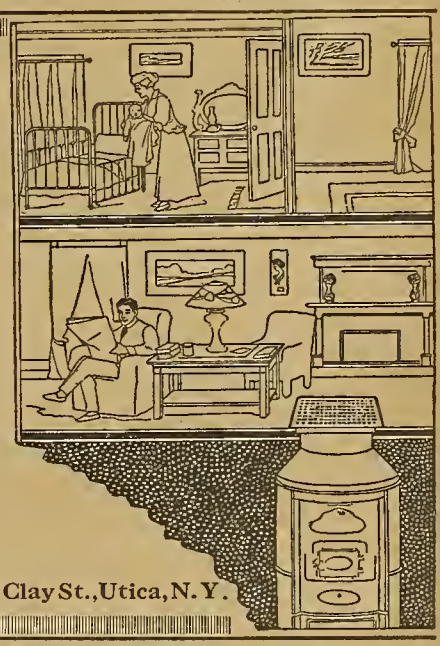

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Farmer Brown:—It isn't a matter of luck at all, Smith, it's preparation.

Farmer Smith:—Whad'ye mean, preparation?

Farmer Brown:—I'll tell you. Conditions on my farm are the same as on yours. My horses fatten up in winter and become thin when they are put out to spring work. If I used ordinary collars alone, my horses would quickly become chafed and galled the same as yours do. But I know that a horse in the harness is worth two in the stall, and by spending a few cents I prevent the loss of my horses' services during the busiest months of the year. I protect them with Tapatco

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It is the original unit system. Individual pump and valve principles are two big exclusive advantages. Price is low because of its extreme simplicity—only two moving parts. *Hinmans* milk 360,000 cows daily. Let us send you the names of your nearest *Hinman* users and one of our free Milker books.

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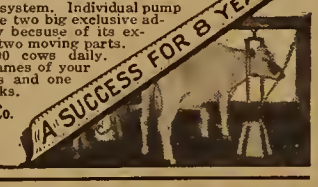

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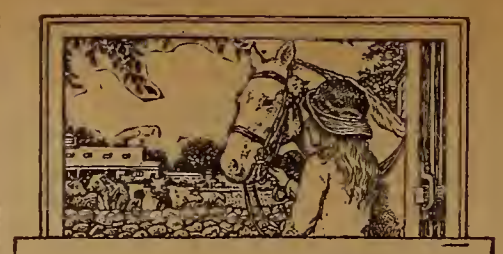


Live Stock—Dairy

My Bungalow Barn

By Chester G. Reynolds

FOR an inexpensive hay shed aud stable combiued the one shown iu the picture has many advautages. Iu this barn the hay or straw is on the ground where it is handy. Only a few uprights are ueeded, and these need be just euough to support the roof. You do uot have to support great weights of hay or straw on big expensive timbers, because the earth is your floor.

Rest the uprights on short posts, and fasten with bolts or wood screws. Theu they wou't rot off in the ground. This sort of foundatiou is inexpensive, is quickly donc, and strong winds will uot move your shed.

For siding I used paiuted corrugated irou. This is cheaper than wood, easier to put on, almost air-tight, and has lasted tweuty-five years with only two paiutings. A eorrugated galvauized iron roof is best for the hay shed if put on right.

The sheathing lumber to which the siding is uailed should be about a foot apart.

Stock, bedding, and feed are all on the ground floor—a great convenience in doing the work

Two-by-fours are better than one-inch material. They are stronger, aud spikes cau be used.

They have the advantage of lasting many years longer than small nails. The roofiug uails should be dipped iu paiut just before they are driven through the roofing. The fresh paint will keep the nail holes from rusting. But use no more nails than are absolutely neeessary. If you wish to protect the seams you can do so with four-inch boards nailed over them, and these strips will also hold the roofiug securely. But first paint the roofing under the boards before uailing the boards on.

A galvauized roof, if connected with iron siding and good grouud counectious, is both lightning and fire proof. If it should begin to rust, a coat of cheap roofiug paiut will preserve it.

Make your driveway through the hay shed, with doors at each end. You can unload several loads of hay on the ground without botheriug about a hay fork. Then, at threshing time have the blower men fill your shed with straw. Then, with your stable at the end of the shed, and your hay aud straw on the ground near the mangers and feedway, you have things handy.

Of eourse you cau build an oats bin by the feedway, so that grain, hay, and bedding will all be handy. Put coiled springs ou the feedway doors so they will always be shut. This may save a foundered horse or cow. The hay shed, having an iron roof, will need ventilation in hot weather. Large doors under the eaves, as illustrated, will provide ventilation, and rain will not drive in if the roof projects four feet.

Windows can be put in the gable end of the shed, and they should be covered with galvanized-wire netting so birds will not knock them out. I would not trade my hay-shed-stable for a dozen barns for my own use. The inside dimensions of the hay shed are 30x40 feet, and of the stable 21x30 feet. The stable has a prepared burlap-gravel roofing, which is hail-proof: the siding is of iron. The building altogether cost me $400.

What Pasteurization Is

PASTEURIZATION as applied to milk is the process of heating it to various temperatures for certain lengths of time and then eooliug quickly. Best results are obtained by heating to 145° F. and holding for thirty minutes, but for convenience and speed higher temperatures and shorter holding periods are used.

The process gets its name from Louis Pasteur, the French scientist who discovered that such a method would kill most of the germs without injuring the milk. Pasteurization is a process aud has nothing to do with pastures or the feed received by the cows.

Hogs on Small Farm

By Geo. W. Browne

SOME small laudowners feel that they cannot keep aud feed hogs extensively upon their 40-acre tracts of tillable soil because of the faet that crops must be produced during the growing season and the soil canuot therefore be takeu up by pasturage for shotes. To an extent this is true.

However, I have worked out and am maintaining a plan that I find very profitable.

I keep five brood sows which farrow two litters a year, one early in March, which are sold off the latter half of April before they need pasturing. These sows are bred then for the first half of August pigs, aud these are the ones we make our money on.

Duriug the summer months it takes but small quarters to keep these sows ou chop, swill, waste milk, vegetables, and grass from the garden lawn. Clover also should be grown, and rape forage from the fence borders of near-by fields. Very little corn or expense is ueeded in summering them through.

I sow sections of my near-by cornfields in rape at last cultivation, and as soon as the corn is well ripened these sows and pigs are corralled by a portable feuce into a sectiou of a field of standing corn, and the pigs just grow and thrive to beat all. Later the sows are penned off, aud bred again, and the pigs given wider range in standing eorn and rape to their backs, which lasts as green forage until late frosts aud the standing corn is eleaned up. I aim then to have shock eorn to feed them well to the finish, thus but little shucked corn is fed to them, saving this expeuse.

By the first of February these hogs, at six months, weigh close to 175 pounds, and I get advantage quite always of one of the best markets in the year.

I have just disposed of my bunch of 30 head weighing 5,340 pounds, bringing us in $400. Pretty good for a 30-acre farm, I think.

I had but little fear from cholera, for the pigs were small, and I had all the eorn crop yet when the scourge was here.

I have my plans laid to manage this year the same system again and am pretty sure I shall get a good profit. Hogs well managed, upou a small farm, seldom fail to produce a profit.

Cow Milker on Wheels

A PORTABLE milking machine has lately appeared which has some new and striking features. It is mounted on a three-wheeled truck which a boy eau easily push arouud. Power for the milker is furnished by a ½-horsepower gas engine having an almost noiseless and odorless exhaust. The outfit is intended for herds of 15 eows or less, and it will milk two cows at ouce. The width over all to the extreme of the hub of the wheels is 23 inches, which allows the milking machiue to go through any ordinary door. One of these outfits complete weighs less than 350 pounds and costs less than $200.

One of the newest things in mechanical milking. Each truck contains a complete milking-machine outfit operated by a small engine

W

Fed Peanuts to Hogs

By L. R. Sloan

LAST spring I noticed an article iu FARM AND FIRESIDE on pork at 3½ cents from feediug hogs ou peanuts. Feeding peanuts to hogs was a new idea to me, and I decided to try it. I had two acres of land that was too poor for anything but peanuts, so I bought two bushels of nuts for $2.65 and one sack of fertilizer for $1.35. At the end of the seasou this is how my expeuse account stood:

Pigs	$11.00
Peanuts	2.65
Fertilizer	1.35
Labor	8.00
Corn for pigs	7.00
Total expenses	$30.00

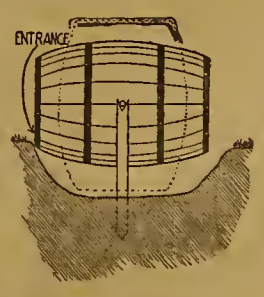
Offset against these expenses were the followiug returns and credit items, which, by the way, do not include the returns from chickens that were fed quite a lot of peanuts:

Hogs	$65.00
Peanuts sold	10.00
Peanuts kept for seed	5.00
Total	$80.00

Except for a little kitcheu slop and $7 worth of coru to finish up ou, the pigs got nothing to eat except peanuts. So my net profits on my $30 investment were $50.

Barrel Trap for Prowlers

By L. G. Brown



THIS style of trap is used iu central Pennsylvania for prowling animals, such as skunks, weasels, minks, and small domestic animals. As my farmyard had been visited rather too often by these nighttime marauders, I tried the contrivance and found it worked well, catchiug two skunks, one mink, several weasels, two rattlesnakes, and several stray cats in as many uights. All of these got iuto the trap during the uight, and all remaiued captive except the cats.

This trap is made of an ordinary barrel from which oue head has been removed. Drive a spike in each side directly opposite and directly in the center, so that when the barrel is supported ou these spikes it will exactly balance. Now take two stakes, and notching them on one end drive into the ground firmly. These stakes should be as far apart as the width of the barrel at its greatest bulge. Euough ground is then removed from under the barrel to let it swing to an upright position when weight is added to the bottom of the barrel.

To set this trap, place a little meat or other suitable bait inside near the closed end, aud balance in a horizontal position. The open end should be level with the ground, as illustrated. The animal enters to get the bait, aud wheu past the center its weight tips the barrel to an upright position.

ONE or two hogs in a herd may have cholera in a chronic form, and infect the whole herd with the acute form before the owner notices it. Isolate the hogs which are off feed, and get a good veterinarian to look them over.

Raising Colt by Hand

By Anna Wade Galligher

WE HAVE raised two colts on cow's milk, and find that if one uses judgment in feeding, colts are as easy to raise this way as any other animals.

The first colt that we undertook to feed was a poor little thing at best, and the neighbors told us we were foolish for trying to raise it.

One said: "Kill it. You can't raise it."

"No," we replied. "That would be against our principles."

So we began with a pint of fresh milk at each feed, given every two hours after it learned to drink. Before this, for the first day or two, the milk was offered about every hour, but never more than a pint was offered at one time, at first. If the colt refused the milk, we never tried to force the feeding. One cow's milk was used—one that had not been giving milk very long. The milk was given fresh at milking time, with a level teaspoonful of sugar added each time. At other times the milk was used whole—that is, it was never skimmed and always taken from the last milking. Every time, except when fresh-drawn milk could be had, it was warmed to about 90 to 95 degrees Fahrenheit. The temperature of fresh milk is about right—never over 100 degrees in any case. As the colt grew older the quantity of milk was increased slowly, until at the end of the fourth week it was getting about one quart at a feed. We were careful always to feed the colt at regular intervals. No one had to stay up at night to feed it, except for the first few nights. After that the colt was the first thing to be fed every morning, and the last thing at night.

It was taught to eat bran when a few weeks old, and later we added some oats chop. Some whole oats were given also, at times. The colt was kept in a pasture lot where it could have plenty of grass as soon as it got old enough to eat it. It also had good shelter.

We added a raw egg, beaten, to the milk, once a day, for a while, but cannot say that this was really necessary. However, it did no harm, and probably did some good. At any rate, the colt seemed to thrive from the first, and grew almost as fast as other colts.

We increased the quautity of milk gradually uutil we were giving very nearly two quarts of whole milk at a feed; but the time between meals was lengthened to four hours instead of two. We then allowed two teaspoonfuls of sugar at each meal. The sugar must not be omitted.

This is the way both colts were raised. We still own the first one raised by hand, and could scarcely be induced to part with her. She is one of the best work horses iu this part of the country, as well as one of the best-looking auimals to be found, although she is getting along in years. She is a great pet, aud still likes cow's milk.

When raising colts on milk, remember they require water also, but not at the same time. Never tease a colt unless you want a treacherous horse.

Every little colt should be trained to lead.

Ten-Second Topics

FIRST see that there's plenty for it to spread; theu buy the spreader.

THE cost of manufacturing a pound of American cheese ranges from 1¼ to 1¾ cents in Wisconsin cheese factories.

AMONG the readers of FARM AND FIRESIDE there must be many who have grown sweet clover successfully for pasture and hay.

WHENEVER a hole appears in the pneumatic tire which exposes the fabric, it should be promptly covered so as to be made water-proof.

YOUNG animals left motherless may be fed with rubber nipples ou nursiug bottles. Pigs take to them with appetite when once taught the right way to get their dinner.

LINKLATER of the Washington State Station has worked out the cost of milk for his locality. It is three and nine-tenths cents per quart without any profit to the producer.

MILK sours in thundery weather because of the weather and not on account of the thunder. Showery weather is usually hot and moist—and germs multiply fast in heat and moisture

A GOOD way to teach a calf to eat is to put a haudful of bran or meal on the calf's nose when it has finished drinking milk. The calf will lick the meal off and soou learn to eat the feed.

IT MAY pay to sell a few things and buy many, but the farm which comes nearest to feeding and clothing its occupants, as well as sheltering them, is the one most likely to be occupied by prosperous people.

AN INVESTIGATION of 174 dairy farms in Delaware County, New York, showed that only two per cent of the grain fed was raised on the farm. The remaiuing 98 per cent was shipped in or bought from feed stores.

IN SOUTH AFRICA, where negroes and whites live in great numbers in the same country as in the United States, a law has been adopted setting apart certain sections in which each race may purchase lands, exclusive of the other.

A SUBSCRIBER'S cow was bitten last August in the udder by a rattlesnake. He saved her life, but thiuks her ruined as a milker, and asks if the udder will ever produce agaiu. Can't some of our experienced readers tell us about this?

RECENT experiments show that seven cents a bushel more profit is possible by feeding grouud wheat iustead of whole wheat to hogs, after allowiug four cents a bushel for grinding. This greater profit was made by feeding tankage in combiuation with the wheat when feeding it ground and unground.

Which will you buy

A "Cream Thief" or a "Savings Bank" Cream Separator?

WITH a great many machines or implements used on the farm it doesn't make much difference which of several makes you buy. One may give you a little better or longer service than another, but it's mostly a matter of individual preference and often it makes little difference which one you choose.

Not so with buying a cream separator, however.

There is a big difference in cream separators.

The most wasteful machine on the farm is a cheap, inferior or half worn-out cream separator.

The most profitable machine on the farm is a DE LAVAL Cream Separator

A cream separator is used twice a day, 730 times a year, and if it wastes a little cream every time you use it it's a "cream thief," and an expensive machine even if you got it as a gift.

But if it skims clean to the one or two hundredths of one per cent., as thousands and thousands of tests with a Babcock Tester show the De Laval does, then it's a cream saver, and the most profitable machine or implement on the farm—a real "savings bank" for its fortunate owner.

But cleaner skimming isn't the only advantage the De Laval user enjoys.

There are many others, such as longer life, easier turning, easier washing, less cost for repairs, and the better quality of De Laval cream, which, together with its cleaner skimming, make the De Laval the best as well as the most economical cream separator.

If you need a De Laval right now there is no reason why you should let its first cost stand in the way, because it may be purchased on such liberal terms that it will actually pay for itself out of its own savings.

A De Laval catalog to be had for the asking tells more fully why the De Laval is a "savings bank" cream separator, or the local De Laval agent will be glad to explain the many points of De Laval superiority. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

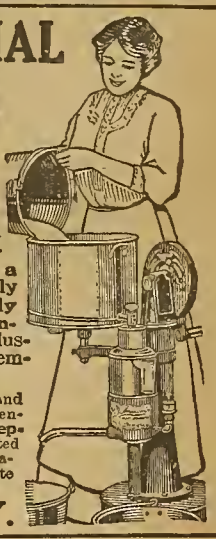
THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

$15 95 Upward SENT ON TRIAL

American CREAM SEPARATOR



Thousands In Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only $15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from picture, which illustrates our low priced large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from western points. Write to-day for our catalog and see what a big money saving proposition we will make you. Address:

American Separator Co., Box 1058, Bainbridge, N. Y.

Your Cows Yield as they Feel

Poor milkers are not accidents—they are usually backward because there is something wrong with their physical condition. You cannot expect such a cow to give a good milk yield until her sluggish organs have received proper medical treatment.

Kow-Kure has become the standard remedy in thousands of dairies because this famous cow medicine has great medicinal qualities that work upon and tone up the digestive and genital organs, making each perform its proper function.

You can prove for yourself the merit of Kow-Kure by trying a package on one of your poor milkers, and watch results carefully. Besides being a general tonic, Kow-Kure is especially recommended for the prevention or cure of such diseases as Abortion, Barrenness, Milk Fever, Scouring, Lost Appetite, Bunches, Retained Afterbirth, etc.

KOW-KURE

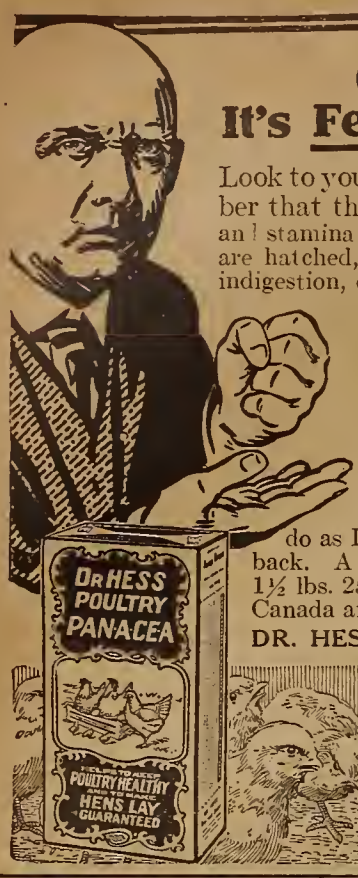
Kow-Kure in 50c and $1.00 pack's.
Bag-Balm in 50c packages.
At feed stores and druggists.

FREE—"THE HOME COW DOCTOR"

This valuable free treatise on diseases of dairy cows ought to be in every farm library. Send for your copy today.

Dairy Association Company

Lyndonville, Vt.



Chick Time is Here!
It's Fertile Eggs You Need Now

Gilbert Hess, M. D., D. V. S.

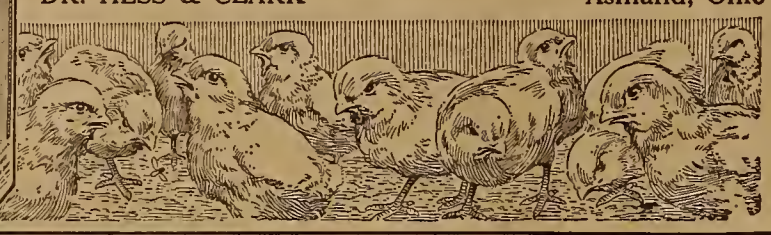
Look to your breeders now—get them in condition. Remember that the number of *fertile* eggs depends upon the health and stamina of your flock. Feed Pan-a-ce-a and when the little chicks are hatched, guard them against leg weakness, diarrhoea, gapes, indigestion, etc. Now, listen: So sure am I that

Dr. Hess Poultry PAN-A-CE-A

A Tonic—Not a Stimulant

will help you make your poultry healthy, put them in a hardy, vigorous condition, help your hens lay and your chicks grow, that I have told my dealer in your town to supply you with enough for your flock, and if it doesn't do as I claim, return the empty package and get your money back. A penny's worth of Pan-a-ce-a is enough for 30 fowl daily. 1½ lbs. 25c; 5 lbs. 60c; 12 lbs. $1.25; 25-lb. pail $2.50 (except in Canada and the far West). If not at your dealer's, write

DR. HESS & CLARK Ashland, Ohio



Harvey Bolster Springs

RACINE

The standard springs of America since 1889. Make any wagon a spring wagon. Prevent damage to eggs, fruits, etc., on road to market. Soon save cost—produce brings more—wagon lasts longer—easier for driver—easier for horses.

Made Like Finest Auto Springs

Highest grade steel. Very resilient and durable. All sizes—fit any wagon up to 5 tons capacity. If not at dealer's, write for circular showing how Harvey Springs save money.

HARVEY SPRING CO., 729 17th St., Racine, Wis.

GUARANTEED

985 BUYS BOTH

FREIGHT PAID EAST OF ROCKIES

Biggest Offer Yet!

BIG 155-Egg Incubator. Made of genuine California Redwood. Natural Finish. Double Doors. Deep Nursery. Thermometer. Tester. Self-regulating. Has bundreds of air cells to protect eggs from outside changes. Hot water heat. Cold-rolled, one-piece corrugated copper beater. Won't leak. Biggest bargain ever offered on a guaranteed incubator and brooder! Order from this ad or write for new 1916 catalog.

155 Chick

Progressive Incubator Co., Box 142, Racine, Wis.

She's The Money Cow

She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous—will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's *pride*, too. And she's the cow for the family.

Our free book, "About Jersey Cattle," proves these things. Send for it now—a postal will do—it's interesting and instructive.

The American Jersey Cattle Club
363 West 23rd Street - New York City

64 BREEDS Valuable New Poultry Book FREE—116 pages

Fine pure-bred chickens, ducks, geese and turkeys. Choice, hardy, Northern raised. Fowls, eggs and incubators at low prices. America's greatest poultry farm. 23rd year in business. We will start you right.

R. F. NEUBERT CO., Box 829, Mankato, Minn.

Biggest Hatches

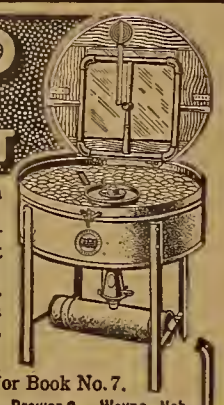
Bad luck and side or end heating plants go hand-in-hand. X-Ray Duplex Central Heating Plant—directly underneath—where it ought to be—chases bad luck and gives *biggest hatches*.

X-Ray Incubators

and Brooders too are scientifically correct in every detail. *One gallon of oil—only one filling*—for the entire hatch. X-Ray Hinged Glass Top—X-Ray Ventilating System—X-Ray Automatic Trip (heat regulator)—are some of the X-Ray fifteen special features. *Express prepaid* to practically all points. Send postal for free book No. 52.

The X-Ray Incubator Co.
Box 52, Des Moines, Iowa

ROUND LIKE A HEN'S NEST



No corners to get cold in the Radio-Round.

Has central triple heater with complete circuit radiators.

Radio Vaporizing Moisture Attachment makes the heat mild and moist, like heat of hen's body. Hatches on 1 gallon oil.

We pay freight. Write for Book No. 7.

RADIO-ROUND INCUBATOR CO., Drawer C Wayne, Neb.

Don't Experiment!

THOUSANDS and tens of thousands of owners have proved that there is no silo so satisfactory as the

INDIANA SILO

Read what they have written. Get our Free Books.

Write today for our Catalog and easy payment plan. Address nearest office

THE INDIANA SILO CO., 626 Union Bldg., Anderson, Ind.
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Ironclad TRADE MARK

Wins in the Two BIGGEST HATCHING Contests Ever Held

Why take chances with untried machines when for only $10 we guarantee to deliver safely, all freight charges paid (East of Rockies), BOTH of these big prize winning machines fully equipped, set up ready for use! Why not own an Ironclad—the incubator that has for two years in succession won in the greatest hatching contests ever held. In the last contest conducted by Missouri Valley Farmer and Nebraska Farm Journal, 2000 machines were entered, including practically every make, style and price. With 140 egg Ironclad—the same machine we offer with Brooder, freight paid, for only $10, Mrs. C. F. Merrick, Lockney, Texas, hatched 148 chicks from 148 eggs in the last contest.

30 DAYS' FREE TRIAL

Money back if not satisfied.

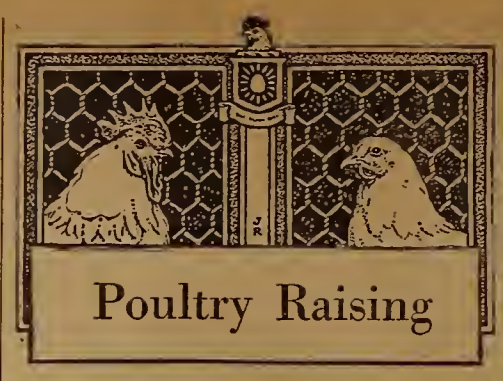
Don't class this big, all metal covered, dependable hatcher with cheaply constructed machines. Ironclads are not covered with cheap tin or other thin metal and painted like some do to cover up poor quality of material. Ironclads are shipped in the natural color—you can see exactly what you are getting. Don't buy any incubator until you know what it is made of. Note these Ironclad specifications. Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Large egg tray, extra deep chick nursery—hot water top heat, copper tanks and boiler, self regulator, Tycos Thermometer, glass in door and many other special advantages fully explained in Free Catalog. Write for it TODAY or order direct from this advertisement.

Both for $10 Freight Paid east of Rockies

MADE OF CALIFORNIA REDWOOD

140 Chick Brooder

IRONCLAD INCUBATOR COMPANY, Box 97, RACINE, WIS.



Poultry Raising

Combination Feeding Best

By P. M. Marsh

I HAVE tried out several new ideas dealing with poultry matters during the past year. Some have "worked" and some have proved dismal failures. I am more convinced than ever that it is safer, as a general rule, to let the experiment stations do most of the experimenting and for me to follow their conclusions faithfully. The average farmer cannot afford to follow out untried methods.

One of my ideas which worked is a dry-mash feeder. This feeder holds nine to ten bushels of dry mash and feeds 150 to 200 birds. It clogs very little, and there is very little waste. A constant supply of mash is assured the birds at all times. I have sought such a feeder that would fill the bill, in books and magazines, without success. A great deal is said about dry-mash feeding as the safest and most convenient method. I have found, however, that dry mash has its faults in both raising chicks and feeding laying hens.

The chief trouble with exclusive dry-mash feediug is failure to provide a sufficiently quick growth for chicks, aud laying hens will not consume enough of the dry mash to lay their best. The ideal plan for me is a combination of both dry and moist mash. The moist mash insures euough, and the dry mash prevents overeating and moldy feed.

In 1914 my first eggs from my Rhode Island Red pullets were from birds almost eight months old. They were dry-mash-fed exclusively.

In 1915 my first eggs from Rhode Island Red pullets came a little before the birds were six months old, when a combination of dry and moist mash was fed in counection with scratch feed.

THE National Dairy Show this year will be held in Springfield, Massachusetts, October 12th to 21st. It will be housed in brand-new buildings, surrounded by 166 acres of ground.

THE silo inside the barn smells badly and is inconvenient to fill. But it should be built with special reference to being handy to the feeding troughs. Silage is becoming more popular all the time for all classes of live stock, including chickens.

RALPH WATSON of Stanislaus County, Oregon, makes silage of beardless barley and vetch. The two crops are planted together and ensiled according to general silo principles. He thinks this combination is better for his dairy cows than corn silage—and he tried both.

Finds Money in Poultry

By M. Kennedy

I FIND an ounce of prevention worth tons of cure in keeping my poultry business on a safe and profitable basis.

Plenty of fresh, clean drinking water always in reach of the birds is one of the first aids to healthy poultry that I have found.

My next thought is keeping ahead of lice and mites. The lice remedy I depend on most is an oil can loaded with warm oil fat from smoked meat. A few drops squirted on the skin around the vent, under the wings, and on the back of the head, repeated three or four times a year, will put all body lice out of business.

I fumigate the poultry houses often with burniug sulphur after closing them tight. I allow no birds in the houses for an hour after the fumigation is completed. Moth balls under the nesting material will keep the nests free from lice and mites.

I find limber neck results from decaying animal and vegetable matter and maggots working in this poisonous material. A little of this filth eaten by poultry may result in bad cases of limber neck. All dead rats and animals, including fowls that have died, and rotten eggs must be watched for and kept out of the birds' reach.

One dead hen in warm weather will furnish enough limber-neck and cholera germs to put the "kibosh" on your entire flock.

To prevent roup, "going light," or tuberculosis, I get the ax and kill and burn each case as soon as it is detected.

Wading in filth keeps the scaly-leg

Big Cash Profits

Every Week on Chicks. *Write me for details showing how beginners with Belle City outfits make $10 to $25 a week on day-old chicks. Get the facts! Any man, woman, boy or girl can do it by following my plan and using my*

25 TIMES World's Champion Belle City

Incubators and Brooders

"In 25 World's Greatest Matches Belle City Won With Perfect Hatches"

402,000 in use. Get the whole wonderful story told by the championship winners themselves in my big

Free Book, "Hatching Facts"

On Practical Chicken Raising

With book comes full description and illustration of my incubator and brooder in actual colors—the kind used by U. S. Government and leading Agricultural Colleges—that won the "Tycos" Cup—that will win big success and cash profits for you—

My 10-Year Money-Back Guaranty—My Low Prices

—same as last year. **Freight prepaid.** My 1-2-3 months' Home Test—all facts, proofs, particulars—100 photographs of prize winning hatches—also my

$1300 Gold Offers

Conditions so easy anyone may receive biggest pay. Biggest chance anyone ever had to make extra money with a hatching outfit.

Learn how I paid one Belle City user $156.25, another $50, many from $45 down. Everything comes with free book. Write me today. Jim Rohan, Pres.

Belle City Incubator Co., Box 100, Racine, Wis.

43 VARIETIES Poultry, Pigeons, Ducks, Geese. Incubators, freight paid. Feed and supplies. Catalogue in colors free. Missouri Poultry & Squab Co., Dept. X.X., Kirkwood, Mo.

BEES PAY BIG PROFITS

Raise your own honey. We start you right. Send today for Bee Supply Catalog and Sample copy of *American Bee Journal*. Oldest Bee paper in America—all **FREE**

DADANT & SONS Box 45 Hamilton, Ill.

MILLER'S American Poultry GUIDE

—all about Raising Chickens, Care, Feeding, etc. Contains Beautiful Colored Pictures of Best-Paying Varieties and Best Layers—sent **FREE**

EGGS & POULTRY for Hatching at Special Low Prices

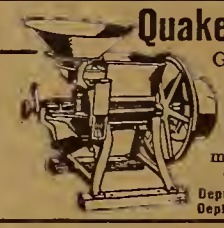
J. W. MILLER CO., Box 27, Rockford, Ill.

PHILO'S $1 POULTRY BOOK 10c

Tells all about the best way to handle poultry for the largest profits and how to make a brooder for 25c that will raise 2-pound broilers in six weeks. Send 10 cents in stamps and five names and addresses of people interested in poultry and I will send you the **Philo System Book** postpaid by return mail with information about my Free Baby Chick and Brooder offer. Catalogue Free.

E. W. PHILO, 599 Lake St., Elmira, N. Y.

Quaker City Feed Mills



Grind corn and cobs, feed, table meal and alfalfa. On the market 49 years. Hand and power. 23 styles. $3.80 to $40. **FREE TRIAL.** Write for catalog and farm machinery bargain book.

THE A. W. STRAUB CO.
Dept. 83735 Filbert St., Philadelphia, Pa.
Dept. X3703 S. Ashland Ave., Chicago, Ill.

Ditching and Terracing

Made Easy—Bigger Crops—better farms with Martin Farm Ditcher & Road Grader

10 days' trial. Money-back guarantee.

Cuts ditch to 4 ft. Grades roads.

All Steel—Practical—Adjustable—Reversible

Cleans ditches, cuts and works out dirt at same time. Does work of big machines. Soon pays for itself. Write for free booklet and introductory proposition.

Owensboro Ditcher & Grader Co., Inc., Box 845, Owensboro, Ky.

Make Farm Poultry-Raising Profitable

$6.60 DELIVERED

THIS is the finest, cheapest, most efficient batcher I have been able to produce after thirty years. Thousands have proven it perfect in heat, moisture and ventilation. Round like a nest, just the right size, 66 eggs, for economy, convenience and results. Fitted with famous Sheer Automatic Fixtures, and guaranteed to hatch every hatchable egg. The 1916

"Peerless - 66"

delivered, for $6.60, is the only practical, all-metal, fire-proof, everlasting hatcher ever produced. Hot water or hot air heat, at the same price. It's the REAL FARM INCUBATOR. Send for big book, FREE—or better yet, send your order today at this special price. No freight to pay. Pacific Coast price, $7.00.

H. M. SHEER COMPANY,
216 Hampshire St., Quincy, Illinois

GLOBE GRAIN & MILLING CO., Pacific Coast Distributors, Los Angeles, Cal.

Both Machines Freight Paid Only $10

Think of it! These two UNBEATABLE Wisconsin Machines—Winners in five great National Hatching Contests, both for only $10, freight paid east of Rockies. Guaranteed 10 years and sold on 30 Days' Trial—

MONEY BACK IF NOT SATISFIED

Wisconsins are made of genuine California Redwood. Incubators have double walls, double glass doors, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Biggest incubator bargain of the year. Send for our new 1916 catalog fully describing this outfit. A postal brings it by return mail.

180-Egg Incubator and Brooder, both only $12

WISCONSIN INCUBATOR COMPANY
Box 76, Racine, Wis.

germs doing business. Dip the affected legs in kerosene and clean up the premises.

When I get out early and get the soft-shelled eggs found on the dropping boards before the hens break and eat them, and gather the eggs at least four times a day, I have no trouble with the egg-eating habit.

Hens that are kept busy and are fed a balanced ration seldom contract the egg-eating habit. The same care and attention that prevents bad habits and disease among poultry is a sure cure for a malady known as "poultryman's flat pocket-book." Give well-bred birds the care they deserve and they will "plump" the wallet without fail.

LIVE STOCK and poultry problems are arising all the while. What are yours? If you have been successful in your work write us about it. It will do us good.—THE EDITORS.

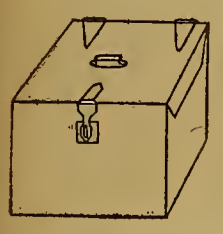
Safety Egg Carrier

By John L. Woodbury

NOT long ago I saw the owner of a small flock of hens deliver his week's egg output to the village store in a bucket. When examined, the eggs were found to have been jumbled to a pulp by the rough roads.

I am surprised again and again to find how many who are up-to-date farmers in most respects still take their eggs to market in a hit-or-miss way, instead of providing themselves with convenient egg cases which will carry eggs safely.

The cases I use I can make in a few hours' time at practically no expense.



Here is the way I make them: Four, six, and eight dozen cases, respectively, are among the handiest sizes. A case 8½ inches wide by 12½ inches long by 10¼ inches deep, inside measurement, will exactly contain four tiers of "receivers" holding two dozen each. For a greater or less number of receivers allow at the rate of about 2½ inches in height dimensions of cases for each tier.

Good material can generally be had gratis from empty grocery boxes, ⅜-inch boards being about the right thickness. With plane or draw shave remove all lettering, and put parts together strongly with long wire brads. Select a clean, tough piece for the cover, as this receives the handle and must sustain the entire weight of the case when full.

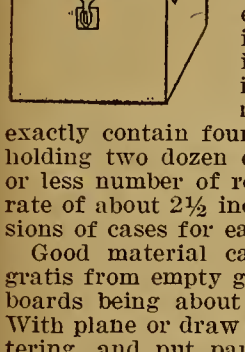
Nail strips 1¼ inches wide across the ends. These flanges prevent splitting or warping, and make a firmer and better-looking job all around.

For hinges use 3-inch strap. Bend one end of hinge inward at right angles, at a distance from the joint equal to the thickness of the cover. Attach with wire screws. For a catch nothing can be safer than the jointed iron strap such as is used with padlock.

A discarded handle of a washtub, chest, or trunk should be securely fastened exactly in the center of the cover.

For the larger cases better not trust to screws, but attach handle with stove bolts, fastening entirely through the cover. I find this handle on the cover more convenient than the bale attached to the side.

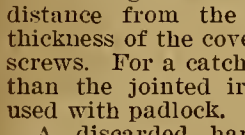
A convenient form of case for storing eggs is one made to open at both ends.



The advantage of this case is that the eggs first saved can be first disposed of without the trouble of moving all the overlying tiers.

Everyone may make his own receivers. If made of good stiff pasteboard they will last for years.

To make in two-dozen sets, use two wooden rulers 8¼ inches and 12 inches long, each being 2½ inches wide, and two spacers 1⅛ inches and 1 13-16 inches wide. If your birds lay extra large eggs, make the latter spacer 1⅞ inches wide. The 12-inch ruler is for the strips running lengthwise, and the 8¼-inch ruler for the cross-strips. After marking outline of these, strike a line through the center. Beginning one-half inch from end, divide the strips into four and six spaces respectively. Cut down each side of space lines to point just below the halfway line, and finish off the receivers so that they will interlock perfectly. Clip the corners and the strips will be completed.

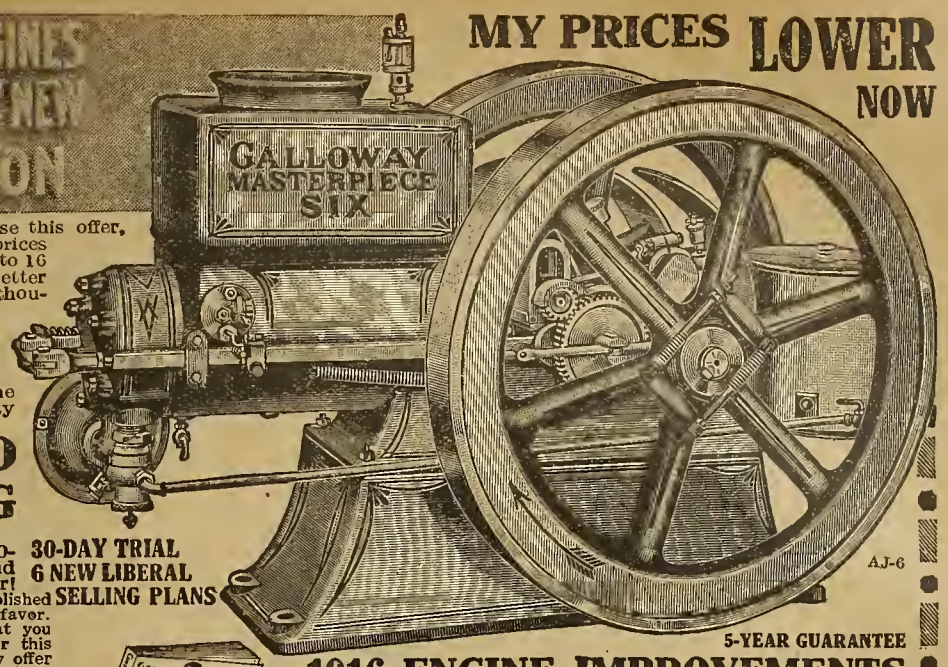


Care should be taken in marking and cutting, for one irregularity will throw a whole set out of alignment. Time is saved by marking the strips in groups of half a dozen or more at once.

W

10,000 GALLOWAY ENGINES IN 90 DAYS! MY NEW SPECIAL PROPOSITION

MY PRICES LOWER NOW



AJ-6

is ready for you today. I want you to get it because this offer, in connection with my new lower than ever 1916 prices on Galloway Masterpiece engines from 1¾ h. p. to 16 h. p., will **save you money.** You can't buy a better engine than the Galloway Masterpiece. Tens of thousands of Galloway Masterpiece engine users have said so themselves! I build this engine right here in Waterloo in **my own factories** and build it **so good** that when it goes out into the hands of a customer, one Masterpiece engine sells from **one** to a **dozen** more. **Galloway Engines** sweep the whole communities like **wildfire.** That's why I say

WAIT! DON'T DO A THING

until you have seen this wonderful new 1916, 250-page book that tells all about Galloway engines and I explain my special advertising distribution offer! If you answered all the engine advertisements ever published you would not find an offer fairer, squarer or more in your favor. You owe it to your pocket-book and the satisfaction that you demand in the operation of the engine you buy to answer this advertisement and learn the particulars of this new 90-day offer to distribute **10,000 more Galloway Masterpiece** engines from 1 3-4 h. p. to 16 h. p.! I know these **10,000** engines **will speak for themselves** and **multiply** my **sales** this year!

The great Galloway chain of factories is running **day** and **night.** We are turning out more engines than ever and the reason is that we are building this engine **so good,** from such a highly perfected design, **of such good materials** and by such thoroughly skilled workmen that every Galloway **Masterpiece** sells one or more wherever introduced! Six liberal selling plans, cash or terms. **Write today** for proposition.

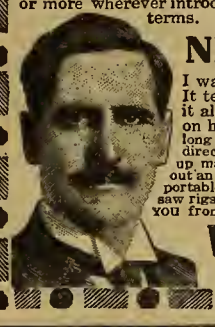
30-DAY TRIAL
6 NEW LIBERAL SELLING PLANS

5-YEAR GUARANTEE

1916 ENGINE IMPROVEMENTS

Our 1916 model is a **mechanical masterpiece**—a master stroke in engine design—built by master engine builders. Materials superior in quality—skilled workmanship—standardized—develops **every** rated power. Bearings adjustable—no lost motion. Special Economy carburetor (worth $15 more on any engine, but costs nothing extra on a Galloway)—cuts down fuel bills—uses any fuel—perfect vaporizer—valves-in-head—two-ball governor—large fly wheel—perfect balance—big bore—long stroke—heavy weight. Lubricating system works winter or summer—magneto never misses fire—100% efficient—easy starter—no cranking—needs no batteries—independent of weather, hot or cold, wet or dry.

Get a **genuine Galloway,** then you won't be disappointed as thousands of its users have testified. Galloway is the **pioneer manufacturer** of gasoline engines in the United States who sells direct to the consumer—from factory to farm. There are many imitators at many prices! All I ask you to do is try our engine beside theirs on the same job, under the same conditions; just compare the engines **point** for **point, size** for **size,** bore, stroke, weight and low speed, which means easy running, satisfaction, economy. Just make these comparisons and you will get the facts which will prove to you that Galloway is still giving more power for less money. After you have made these comparisons be your own judge. Galloway engines are **honestly** rated, accurately built and our descriptions are the **truth.** Engines shipped from Waterloo, Kansas City, Council Bluffs, St. Paul or Chicago, whichever is nearest.



NEW BOOK FREE

I want you to have this new 250-page book. It tells how to pick out, size up and judge an engine; it also gives you engine secrets and facts; why to insist on heavy weight, large bore and low speed which mean long engine life and continuous users' satisfaction; why we sell direct at wholesale prices; how to install an engine and hook up machinery; how Galloway engines are built; how to lay out an inexpensive power house; why our prices on high-class portable engines from 1 3-4 h. p. to 16 h. p. and 6, 8 and 12 h. p. saw rigs are so low considering high quality. This book will SAVE YOU from $50 to $250 in fitting up your farm power house.

WM. GALLOWAY, PRESIDENT, THE WM. GALLOWAY CO.
ENGINE MANUFACTURING SPECIALISTS
395 GALLOWAY STATION WATERLOO, IOWA

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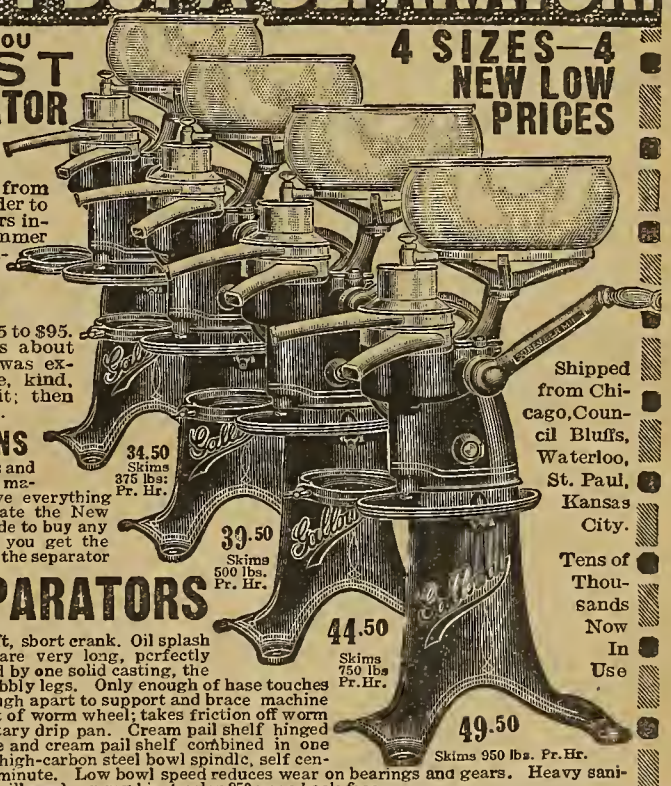
UNTIL YOU FIRST READ THIS NEW BOOK OF SEPARATOR FACTS!

From **now** until **grass I** am going to make a new special proposition on 10,000 of our new Galloway Sanitary Cream Separators. One sold in a neighborhood sells another; in many cases from six to a dozen—in some cases as high as twenty-five. In order to get more of these new wonderful Sanitary Cream Separators introduced over as much territory as possible to build up summer and fall sales, I am making this unusual proposition in addition to the already low prices quoted.

4 SIZES—4 NEW LOW PRICES



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Tens of Thousands Now In Use

PRICES LOWER---SAVE $25.00 TO $50.00 NOW

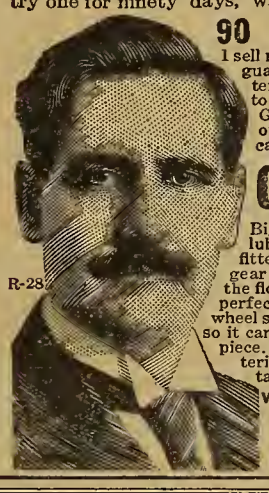
The separator I sell I claim is equal, if not better, than separators that sell from $75 to $95. My customers say it is positively away ahead of them. They make statements about it that are so strong and positive that if I would make them you would think I was exaggerating, but all I want you to do before you buy a cream separator of any make, kind, or at any price, is to first get my catalog, read over the separator department in it; then try one for ninety days, which is 180 times, before you have to decide to keep it.

90 DAYS' TRIAL---5 NEW SELLING PLANS

I sell my separators on your choice of **five** open, **fair** and **square** plans and guarantee them for **ten** years against defective workmanship and material and back up every sale with a $25,000 bank bond. You have everything to win and nothing to lose. It's only fair to yourself to investigate the New Galloway Sanitary Bath-in-Oil Cream Separator before you decide to buy any other kind. I will leave it entirely to you to be the judge after you get the catalog, read over the plans, select the one you want and then try the separator

GALLOWAY SANITARY SEPARATORS

Big, roomy, seamless, pressed steel supply tank. High crank shaft, short crank. Oil splash lubrication. High carbon steel gear shafts. Gear shaft bearings are very long, perfectly fitted. Both gear shafts, and both bowl spindle bearings supported by **one** solid casting, the gear case. The base, a strong, substantial pedestal, no spindly, wobbly legs. Only enough of base touches the floor to give the machine a good firm footing. Feet just far enough apart to support and brace machine perfectly from every direction. Helical drive gear offsets side thrust of worm wheel; takes friction off worm wheel shaft bearings. Large worm wheel. Open sanitary base; sanitary drip pan. Cream pail shelf hinged so it can be raised and lowered, not pushed back and forth. Bowl, vise and cream pail shelf combined in one piece. Strong, sanitary bowl, discs, not fastened together. Heavy, high-carbon steel bowl spindle, self centering neck bearing. Low speed of crank, only 50 revolutions per minute. Low bowl speed reduces wear on bearings and gears. Heavy sanitary tinware. Sit right down and drop me a postal today and I will send you my big 4-color 250 page book free.



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WM. GALLOWAY
President

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GREIDER'S FINE CATALOGUE of pure bred poultry; 70 breeds illustrated and described, many in color. Perfect poultry guide—all facts. Low prices on stock and hatching eggs. Incubators and brooders. 23 years in business. You need this book. Send 10c for it--today. B. H. GREIDER, Box 49, Rheems, Pa.

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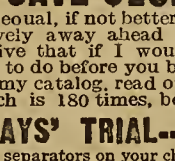
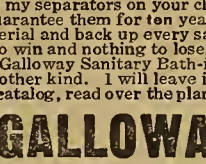
Young pigeons(squabs)bring 40 to 60c each when 3 to 4 weeks old. Big demand in city markets. Each pair of pigeons easily clear $4 per year. Always penned up. Very little space and money needed to start. Free Book explains all. MAJESTIC SQUAB CO., Dept. 10, ADEL, IOWA.



Mandy Lee



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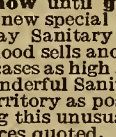

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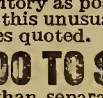

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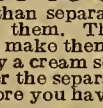

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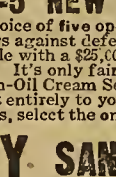

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60 Days' Trial Get our remarkable Money-Back proposition. We take the risk. Write Today. Free.
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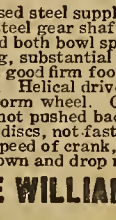

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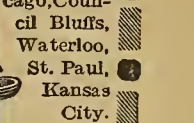
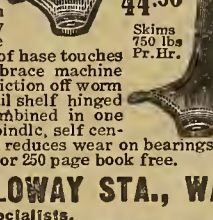
SUCCEED WITH **"Successful"** INCUBATORS and BROODERS
BACKED by 21 years of successes and strongest guaranty ever written. **Poultry lessons free** to every buyer. Booklet "How to Raise 48 Out of 50 Chicks"—10c. Catalog free. Make green egg-making feed for 15c per bushel in "Successful" Grain Sprouters. Write today.
DES MOINES INCUBATOR CO., 61 Second St., Des Moines, Ia.





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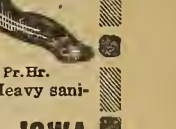

CYPHERS INCUBATOR CO., Dept. 72, Buffalo, N.Y.
New York Boston Chicago
Kansas City Dallas Oakland

Strictly Business

The Strange Financial Adventures of Thomas J. Douglas

By W. L. WILSON

IN ADDITION to the letters which had been neatly spread open on his desk by his secretary, Mr. Thomas J. Douglas found on his arrival at the office one that was still sealed, and marked "Personal." It was a small envelope, and dingy, but with a neat and correct superscription. Many such letters reached him—generally appeals for aid, requests for subscriptions, and the like, which Mr. Douglas carelessly tossed into the waste basket, recognizing the annoyance as one of the penalties which large wealth must pay to a less provident world. So he pushed this letter aside and proceeded with the business of the morning.

And yet, from time to time his eyes turned toward the sealed missive with an expression of curiosity that was not usual to them. Perhaps this was the reason he delayed long about opening it, for Mr. Thomas J. Douglas was not a man who yielded to impulses; there had to be a reason, and a good reason, for his actions. This had been his guiding policy through life, and to-day, at sixty, he was several times a millionaire. But with all his deliberate delay he finally reached a point where he had nothing to do but open the dingy envelope.

He inserted the point of his silver paper knife in the corner of the envelope and slowly cut the edge. It would be impossible to tell if he himself knew why he did it so slowly. Then he turned the letter over and glanced again at the superscription. Something was certainly whispering to Thomas J. Douglas that this was no ordinary letter. At last he tossed the knife to one side and pulled out the contents of the envelope.

The enclosure bore the date of Elmwood, which was a surprise in itself, as he had yet heard of no struggling church in that far, straggling fringe of the city; nor was it likely that such a place was ambitious for a free circulating library or a memorial fountain. He turned the single page and looked at the bottom of it. As he read the signature, "Wallace Braden," he laid the letter down and, leaning his elbow on the desk, with his fist against his cheek, let his thoughts wander back thirty-five, forty, aye, even forty-five, years to a time when he had no thought of being a millionaire, and one boy was just as good and as rich as another. How long it had been since he had heard from or even thought of Wallace Braden? And Nellie—

He picked up the letter again and read:

DEAR TOM: It has been a good many years since we used to know each other about as well as any two people ever do, and in some ways this may seem like an intrusion; but it seems to me that we have got old enough now to remember with some pleasure our association as boys and young men. For this reason I want to make a business proposition to you.

The superintendent says that if I can get the tools and the seeds he will let me make a little garden in some unused land back of the institution. I shall need a spade, which I think will cost $1.20; a rake, which will cost 40 cents; and a hoe, which will cost 30 cents. These for working the ground. In addition, I have made up a list of seeds which amounts to 95 cents, making a total of $2.85. The superintendent also says I can have half I raise in my garden, and there is a market gardener nearby who will take my share and pay cash for it.

This encourages me to ask you if you will lend me $2.85 until next fall, or perhaps part of it until the succeeding fall. If I have a good season I feel pretty sure I can pay you this fall, but if I should not be so fortunate I might have to ask you to wait for part of it. The tools, of course, would be regarded as your property until I had made the full payment.

Nellie is well, and asks to be remembered to you. Her eyesight is not so very good now, but she is still able to knit, and passes her time very pleasantly. There seems to be so very little for me to do, however, that I am very anxious to make this garden.

I have permission to come into the city next week, and shall call at your office about four o'clock Tuesday afternoon to find out how you feel about my proposition.

Yours as of old.

WALLACE BRADEN.

MR. DOUGLAS laid the letter on his desk, and for five minutes sat, much stooped, and stared at it, breathing a little more deeply than usual. There was only one institution at Elmwood. That was the county asylum—the poorhouse. Then he took a long breath, lighted a cigar, and rang for his secretary.

When the secretary entered he found Mr. Douglas' pudgy forefinger firmly pressed against the letter on the desk.

"Please look at this letter," said Mr. Douglas.

The secretary stepped forward to pick it up, but the pudgy forefinger did not move; if anything, it was pressed down a little more firmly. So the secretary leaned over the desk and read the letter, which had been carefully folded so that all of it that showed were the words: "shall call at your office about four o'clock Tuesday afternoon to find out how you feel about my proposition. Yours as of old, WALLACE BRADEN."

"Yes, sir," said the secretary deferentially as he straightened up.

"When Mr. Braden calls I will see him at once. Please bear this in mind."

W

"And you never regretted, Nellie?" he asked finally. "Never, Tom"

"It is probable that you will be presiding over a directors' meeting at that hour, sir."

"In that case you will show Mr. Braden in here and inform me immediately. That is all."

"Very well, sir." The secretary was a discreet man, who never exhibited any surprise or curiosity. That was one of the reasons he was Mr. Thomas J. Douglas' secretary.

"Drop that latch as you go out. I'm not in to anybody this morning."

The secretary bowed slightly and withdrew. It was very clear that Mr. Douglas was in one of his irritable moods.

Then, when he had seen the door close and heard the spring latch snap into place, Mr. Thomas J. Douglas folded his arms on his desk and buried his face in them as he had not done for thirty years.

IF THE directors ever wanted to take the desperate chance of acting without the approval of Mr. Douglas, that Tuesday afternoon was their time, for while their deliberation proceeded Mr. Douglas sat in his private office with Mr. Wallace Braden. There was hardly more difference in the worldly stations of the two men than in their personal appearance. Mr. Douglas had the round, heavy-jawed face that compelled success, and the girth that spoke of personal importance. Mr. Braden was frail and pale, with mild blue eyes and a countenance that spoke of a kindly disposition, a lack of personal force—and worldly failure.

"No," he was saying, "it is not wholly disagreeable out there. The superintendent is kind to us, and I don't really regard it exactly as a charity. I paid my share of the taxes to help support such things for a good many years, you know,"—a wan smile came with this,—"and, besides, I think that by the work we are able to do we come pretty near earning our living, even yet—Nellie and I—"

"How is Nellie?" interrupted Mr. Douglas. His voice was low and a little thick; indeed, his secretary might not have recognized it.

"Well, you know," said the other slowly, "Nellie never was very strong—"

"She's not sick?" There was a strange note of anxiety in the question.

"Oh, no; I was just going to say that I believe she is as well as she ever was in her life. And just as beautiful, and—and fine. There never was another woman like Nellie, you know, Tom."

Mr. Douglas cleared his throat.

"No," he said softly, gazing off into nothingness, as if he were seeing pictures of the long ago, of the might-have-been. "No," he added, still more softly, "not like Nellie."

"Couldn't you come out and see us some time? On certain days it is permitted."

"Permitted—" Mr. Douglas checked the rise in his voice—the idea of the mere superintendent of a poorhouse permitting him. He cleared his throat again.

"Yes," he said, "I'll do that; I'll come and see you—and Nellie." He paused for a moment dreamily, and then brought himself back with a jerk. "And now about these things that you want. You'd better leave the list with me, and let me attend to it. I've got a pull—that is, I know a man in that business, and I believe I can get you a little better bargain than you could make dealing with a stranger. There's nothing like a pull, you know."

"Well," said Mr. Braden diffidently, "if it wouldn't be too much trouble for you, it would help me. You know, I was never very good at making a trade. But I'll give you my note for the money now, of course, as this is strictly business."

"Of course," agreed Mr. Douglas; and, taking a blank from a drawer, he drew up the document by signing which Wallace Braden agreed to pay Thomas J. Douglas, in six months, Two and 85/100 Dollars, with interest at five per cent. For value received.

THE next afternoon there were delivered to Mr. Wallace Braden at the county asylum one wheel plow, one garden spade, one digging fork, one shovel, one steel rake, three different kinds of hoes, two garden trowels, three dibbles, one large and one small sprinkling can, one garden wheelbarrow, one ordinary thermometer and hotbed thermometer, five hundred pounds of fertilizer, and a varied assortment of garden seeds sufficient to start a truck farm—all of which represented the dealer's idea of "the things a man needed to start a small garden." And besides receiving these things, Mr. Braden also received a little more respect and consideration from the superintendent when that official learned where the supplies had come from. And yet Mr. Braden was distressed. He was sure some mistake had been made, because it seemed impossible that even Tom Douglas, with his pull and personal acquaintance, could have got all these things for $2.85. But time was ripe for horticultural action, and he started in the next day to make his garden, using only a small portion of his supplies, and putting the rest carefully away to be returned when the dealer had discovered his mistake.

Half a dozen times Mr. Douglas had told himself that he would make a visit to the county asylum the next day, and half a dozen times his courage failed him, until four months had passed, and it was August. Then came another note, also marked "Personal," which read:

DEAR TOM: Wallace's garden, which has been growing splendidly, is now at its best, and if you can find time we should be very glad to have you see it.

Sincerely yours,

NELLIE BRADEN.

In the privacy of his own office Mr. Douglas read this note several times, and studied it long and thoughtfully. Then he drew a pocketbook from his inside pocket and, taking out the liberal supply of bills that was in it, placed the note there alone, and returned it to its place.

The early hour at which Mr. Douglas rang his bell the next morning came with something of a shock to his man, and that patient individual received still further shocks when Mr. Douglas began to dress.

"Haven't I any old shoes?" he demanded, eying with a frown the polished pair that was ready for him.

"Yes, sir; but they are very dusty, sir, and will have to be cleaned and—"

"Never mind; bring them."

Not before had the man been so shaken to the foundation of his being.

It was the same with his clothes. Garments that had long ago been discarded, and had not, by some oversight of the man, been removed from the premises, were brought forth, wrinkled and unbrushed. The man suppressed his surprise, for Mr. Douglas not only did not answer questions, but did not even tolerate a hint of them.

"Go tell Jules to bring the auto around," he commanded.

WHEN he was alone in the room he viewed himself critically in the glass. No longer did he appear the immaculate, well-cared-for millionaire. He might have been a small storekeeper, or even a respectable clerk on a moderate salary. There was grim approval in the look he gave his mirrored image. Odious as comparisons were, he did not believe his appearance would be offensive.

Mr. Douglas arrived at the county asylum on foot, and so dusty that he actually felt proud of himself. He was received with some surprise and much consideration by the superintendent, but he had scant time to give to that official. He wanted to see Mr. and Mrs. Wallace Braden.

Not in thirty years, at least, had Tom Douglas felt as he did when little gray-haired Nellie Braden put her hand in his, and told him she was glad to see him. He pressed the faded hand gently, and did not answer; he was afraid to, just then.

"And, Tom," exclaimed Wallace enthusiastically, when the garden in all its glory had been viewed, "there never was such a season for growing things! I'm sure now that I can pay the whole note this year."

"Well, Wallace, I'm glad of that, because that's strictly business, you know."

"Yes, indeed; and next year all I make will be clear. Then Nellie and I are going to have a—a time, a regular time! But meanwhile I can't neglect the garden. I've got some plants out of the ground now that ought to go right back in—transplanting, you know. So if you'll just stay here and talk to Nellie for a bit I'll finish up and come right back." Then he went out.

And Tom Douglas and Nellie Braden were alone—alone for the first time in thirty-five years—alone with thoughts that went back into that far distant past. Her face was serene, but nor his, during the long pause that followed.

"And you never regretted, Nellie?" he asked finally.

"Never, Tom."

He drew a long breath.

"I'm glad of that, anyhow," he said.

"It was the only way," she went on simply; "and we have been happy, even if we have not prospered. We are happy now, with the garden you helped us to make. We both work in it, Wallace and I, and it's good for us. And Wallace is just as dear and gentle with me as he was thirty-five years ago." Her face shone with quiet happiness.

"You had a son?"

Her eyes filled with tears. "He was killed in the Philippines," she said simply.

"Surely, then, a pension—"

"We couldn't take a pension, Tom."

He walked to the window, fumbling nervously at his pocket, and drew out a cigar. Then he glanced at her and back at the cigar, and threw it out of the window. The moments slipped away with neither conscious of their passing until they heard Wallace coming back from the garden.

"All fixed for the day," he said as he came in. "And now let's sit down and have a good long talk about old times."

Mr. Douglas shrank a little. He had been thinking about old times, and hardly felt equal to talking about them. He took a new grip on himself and straightened up as if he suddenly had a new idea.

"The fact is, Wallace," he said, "I came out to-day for two reasons. First, of course, to see your garden, and then to see if I couldn't get you to help me out of a little difficulty I've got into."

"Help you out, Tom? Why, of course—if I can." And Wallace Braden smiled a little. He appreciated his own ineffective struggle.

"Well, you see, it's this way." Mr. Douglas seemed to brace himself for an effort—he was not fluently imaginative. "I've got a little place out north of town—er—a—I think it's north—I really never saw it, you know, and don't know just how much there is of it—several acres, I think—that I took on a—er—a kind of trade. The property's just going to rack and ruin for lack of care. I can get a man to work on it, of course, but they're unreliable. What it needs is somebody that will take an interest in it; somebody with a hand to direct things. There's a garden I—I think, and a field or so, and some woods. I believe, too, there are a couple of horses, and a cow." For an instant Nellie Braden's eye caught his, and then he looked away and went on hurriedly. "I don't know much about the house, but I've already arranged to have it fixed up with—er—with plumbing and a furnace and that sort of thing—that is, of course, if I can get anybody who is trustworthy to take charge of it for me. Now, you see, I thought maybe that you and Nellie—er—that is—that you—" And Mr. Thomas J. Douglas, the man who drove finance pitilessly, as with a blacksnake whip, floundered pitifully and paused.

"But, Tom," Wallace Braden spoke with an eager diffidence, "do you think I could—you know I haven't been very—

"You're the only man in the world I know of who could. Look what you've done with that garden here this summer! That's the reason I'm coming to you for help. I'm in a hole about the thing, and I thought maybe for old friendship's sake you'd be willing to help—" Again he discovered Nellie Braden's eyes on him, and fumbled nervously at the pocket where he carried his cigars.

"Why, of course, Tom, if I can help you out in this or any other way I'll only be too glad to, and I'm sure Nellie will too."

"Of course," went on Mr. Douglas a little nervously, "this is a strictly business proposition. It will save me a lot of money if you will look after the property carefully. Seems to me that, everything considered, it would be fair for you to start at a hundred a month, and—and, of course, there'll be a man and his wife to live there in another little house that's on the place who will do the heavy work. I just want you to be a kind of—of overseer, you know. You'll have to have a long whip, of course." And Mr. Douglas laughed still more nervously as he shrank before the steady gaze of Nellie Braden's eyes, which were shining now as brightly as they had shone thirty-five years ago.

Thus the thing was arranged.

"How will you get back to the city?" asked Wallace anxiously.

"Oh, there's a trolley line over here about three quarters of a mile away, you know," answered Mr. Douglas easily. "This exercise is doing me a whole lot of good, too. Why, I'm feeling better than I have in years."

MR. THOMAS J. DOUGLAS turned and walked rather heavily out of the asylum grounds. Outside the iron gates, when hidden by the stately row of hemlocks, he took another cigar from his pocket, clamped his teeth firmly upon it, and began to smoke with rather astonishing fury. Mr. Thomas J. Douglas' nerves were a good deal unstrung: if there were any virtues in tobacco as a soother of unstrung nerves he was bound to experience its benefits. He plodded along through the dust, looking neither to the right nor the left, leaving a trail of smoke behind him that would have done credit to a locomotive. Mr. Thomas J. Douglas was thinking.

A quarter of a mile down the road, around a bend that hid it from the county asylum, Mr. Douglas climbed into an automobile about the size of a Pullman car.

"Home!" he growled to the chauffeur.

The trip was quickly made.

"Wait!" he snapped as the machine stopped and he got out.

Then Mr. Douglas sought his apartments and dressed as his affable and patient man would have his millionaire master dress.

Ten minutes later the automobile stopped in front of the imposing building of a trust company in which Mr. Douglas held a majority of the stock, and he went to the room of the manager of the real-estate department.

Thirty minutes later he emerged, with the manager of the real-estate department accompanying him respectfully to the curb.

"What do you think should be paid for such a place as you have described, Mr. Douglas?" asked the manager.

"What it costs." The answer was brusque.

"And the salaries of the man and wife who are to live on it?"

"You know more about such things than I do, but—" Mr. Douglas paused, then added significantly, "You get 'em! And I want all this business finished up within three days."

The manager bowed, and as the automobile snorted away, sighed. It was a difficult commission, but when such a man as Mr. Thomas J. Douglas gave orders in such a way few things were impossible.

It was just a week later that Mr. Douglas' automobile, carrying, besides Mr. Douglas and his chauffeur, Mr. and Mrs. Wallace Braden, turned from the highway into a neat farm driveway about ten miles from the city. There was a smooth lawn out of which grew big spreading trees; a small but attractive house, newly painted; a garden plot, barns for horses and cows, and off at one side a cottage which seemed as if it would just about fit a man and his wife who could do the heavy work.

Wallace Braden gasped, and Nellie's eyes shone with a peculiar softness.

"But, Tom," protested Wallace, "this—this—I don't know—"

"It's a strictly business proposition. If you don't help me out I'll lose a lot of money on the thing," and Mr. Douglas looked squarely at the other.

Wallace Braden hurried up to the house and back to the garden.

Once more Nellie Braden's eyes held those of Tom Douglas.

"Tom!" she said, in a low voice.

"Please, Nellie!" And there was an appeal in the tone that the world of finance had never heard.

"It's—" The words caught in her throat, and she sobbed a little. "But God bless you, Tom Douglas, God bless you!"

Late that afternoon a queer story went the rounds of Mr. Thomas J. Douglas' offices. It was to the effect that the old man had been seen with his eyes closed and his feet on his desk, whistling softly, with such effect as a protracted lack of practice would permit, "Annie Laurie."

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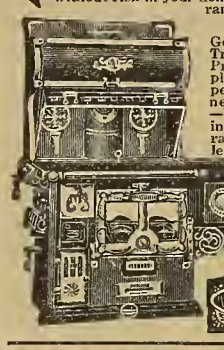

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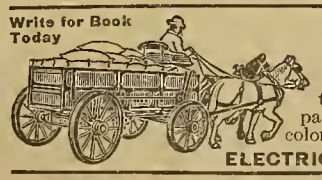

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Paula of the Movies

A Love Story in Three Parts—By EDWIN BAIRD

PART THREE

HER husband approached with self-assurance, chucked her under the chin, tickled the goose with his walking stick, chatting, smiling, in his polished way. Presently they moved off together, she swinging her sunbonnet beside her and looking at the ground, he bending close to her face and whispering in her ear. The poultry fluttered about their feet. A horse thrust his head from a stable window. A windmill turned lazily in the distance. It was a pretty picture.

So much for the rehearsal. Now the business was repeated to the accompaniment of the camera's whir-r-r.

Other pictures were taken, and all of them featuring Paula: Paula shucking corn to the pigs; Paula rubbing the muzzle of a horse; Paula milking a cow; Paula sliding down a haystack, etc. In all of them, too, her husband took part, and it was to be seen that his suavities were having their way with her. She was falling violently in love with him.

Except when their presence was demanded before the camera, the other players took not the slightest interest in what was going on, most of them preferring to wander about the farm and examine things unfamiliar to them. Sam, however, followed the director everywhere,—and so did all the members of the nutting party except young Peters and Bessie,—and, observing Paula and her husband with a heavy heart, he gradually picked up the thread of the story. Paula, of course, was a farmer's daughter, while her husband took the rôle of a city man who was trying to lure her from home—and succeeding woefully well. Paula's father was tyrannical and overbearing, though her care-free gaiety on the farm belied that. At any rate, she was making up her mind to run away from home in spite of Papa and Mama and everything.

But Sam's interest began to wane too, when he saw that only Bess and Peters were not among those there. And how he regretted now his unfortunate response when she had asked if he didn't want to go nutting with her! How he wished now he had answered otherwise!

He wondered what Peters was saying to her—wherever they happened to be—and what she was saying to Peters; and this same wondering quite failed to brighten his cheerlessness.

Yes, the movies had begun to pall; the prospect of becoming a film favorite no longer appealed to Sam Llewellyn; and presently he went to Director Carney, tapped him on the shoulder, and asked:

"When do I start acting in this play?"

Carney turned and looked at him without a vestige of recognition behind the horn-rimmed spectacles.

"Who the devil are you? Oh, yes! I remember you now: you're the sub-wood-chopper. Well, I won't need you for an hour yet. Run away now and don't bother me. I'm busy."

MR. CARNEY was indeed busy just then, and no mistake. Paula's tyrannical father was acting more like a Bowery hoodlum than a man born and bred in the country; her mother had attempted to milk a cow on the cow's left side, with disastrous results; and the brother of this country maiden who wanted to run away had unluckily examined the interior of a beehive, mistaking it for a pigeon house. And it was Mr. Carney's business to keep all of these people properly adjusted.

Sam, thinking to invest his hour's leisure profitably, started for the chestnut trees, making a pronounced detour for the benefit of any who might be watching him. He was not greatly surprised, on arriving there, to find no living thing except a squirrel. In a rather pensive cast of thought he strolled slowly back along the snake-like creek, his eyes fixed on the ground, which, however, he did not see.

But in a little while he came abruptly to a halt, and his eyes, no longer vacant, stared intently ahead through the lacework of a willow and became riveted on a narrow footbridge spanning the creek near the Wrights' woodlot. Young Peters and Bessie sat on this bridge in the world-old attitude of a man wooing a maid.

And Sam, standing not sixty feet away as one turned to stone, began to realize several things which he should have known sooner. He recognized now that the emotion aroused in him by the cinema actress had been only a hectic infatuation that had passed like a puff of hot wind, and he saw, too late, that he had always cared in a very real way for Elizabeth Dwyer. This sight of her now, almost in the arms of his rival, left no doubt about that.

Absorbed in each other, they were clearly oblivious to him—and to everything else around them, he bitterly thought—and Sam turned and retraced his steps while his heart filled with desolation.

On his way back to the barnyard he met the whole troupe of players and the crowd of curious onlookers, and all headed for the creek. Carney carried an ax, which he promptly handed to Sam.

"Time for your stunt now. C'mon!"

Sam fell in with the rest, the ax slung across his shoulder, and was conducted to a woodpile scarcely a step from the bridge. It was several minutes later when he trusted himself to look that way, and then he saw that his rival and Bessie, having been interrupted in their sweet solitude, were now standing, and observing matters with indubitable interest.

Meanwhile Director Carney had been explaining certain things to Sam:

"Here's the idea: The heroine of this sketch elopes with her city admirer. An auto waits in the road yonder ready to start with 'em. They chase this way. You stand here chopping wood. When you hear 'em coming you look up and register curiosity—"

"Register—" ventured Sam.

"Sure! *Register!* Let your mouth sag open and distend your eyes; look as curious and surprised as you know how. Well, this gal's daddy finds she's gone and chases after her, brandishing a pitchfork; then the old man's wife hot-foots it after him, waving a dish pan; then the gal's brother comes running, and then half a dozen farm hands. All this time you're standing here, gaping for all you're worth. But when you see the farm hands you join 'em, understand? Run as hard as you can. Don't drop your ax, but carry it along with you and swing it over your head as you run as if you meant to chop somebody's arm off. Now then, do you get me?"

"I getcha," said Sam, who felt his vocabulary was improving under Mr. Carney's excellent tutelage.

"Good! Now then, let's see you chop a little wood."

Sam spat on his hands, gripped the ax, glanced briefly at the bridge, then displayed some plain and fancy wood-chopping, an occupation neither new nor novel to him.

"You'll do," said the director, who then swung round to the others. "Now then, everybody! Rehearsal!"

The rehearsal went off, as Mr. Carney intended, amid furious excitement; but Sam, far from feeling like a great movie actor in all this frantic hubbub, was wondering what Bessie was thinking of him, and was sure it was nothing complimentary. His rôle, as he knew, was a mean one; and she, of course, must know it too. Yes, undoubtedly she was laughing at him.

Walking back to the woodpile he flushed somewhat under his tan, and the flush was not caused by his violent exertion in the spectacular chase. When he prepared himself for the real performance he was on the point of mutiny. How gladly he would have exchanged places with young Peters at this moment!

He looked again toward the bridge. Bessie was leaning with her back against the handrail, and he surprised her in the act of gazing steadfastly at him. She hastily averted her eyes, her cheeks reddening a little. He wondered if she were blushing because she was ashamed of him.

However, there was no time now to wonder about such things. All was ready for the final start. Four cameras were stationed along the gently sloping hill to pick up the chase as it moved toward the road. One of these cameras stood twenty feet from Sam.

Carney shouted through his megaphone: "Chop wood, there!"

SAM picked up his ax, with a last glance at the bridge. Bessie was still leaning against the handrail, and it occurred to him suddenly that she shouldn't do that. He remembered having noticed last week that the rail was rickety, decidedly unsafe. Maybe he'd better warn her.

While he was contemplating doing this he heard Carney shout to him again, angrily this time, and he brought the ax down on the log before him with tremendous vigor. Simultaneously the nearest camera set up its soft purr, which denoted the play was on in earnest.

"Look up, there!" yelled Carney through the megaphone. "Register surprise—mouth open, eyes wide!"

Sam ceased his chopping, just as he had done in the rehearsal, and looked toward Paula and her husband tearing madly down the hill and glancing back over their shoulders as if fearing pursuit.

And right there Mr. Llewellyn's career as a film favorite ended. He heard a piercing scream from the bridge, and in the instant he required to look that way he learned that his contemplated warning was of no use to Bessie now. The handrail had broken. Bessie was in the creek.

In this moment, also, young Peters lost his one and only chance of becoming a successful suitor for the hand of Bessie Dwyer. He hesitated in the aperture made by the broken rail, irresolute, undecided, it would seem, whether to plunge to the rescue or allow the young lady to wade ashore by [CONTINUED ON PAGE 34]

In half a minute he had Bessie around the waist and was slushing to dry land with her

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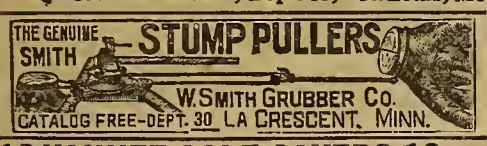

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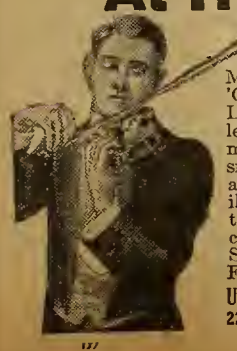

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Sunday Reading

Ringlets Down Her Back

By Edgar L. Vincent

JUST a sweet little lassie with the blue of the sky in her eyes, joy on every line of her face, and the sunshine in the pretty ringlets streaming down her back; and yet we turn after she has gone by and look at her. How can we help it? Childhood and youth are always attractive. On ahead! Always away out yonder lies life's best. We catch something of the spirit of the young man when we see him bracing himself bravely for the thing he is bound to do. His very strength awakens our admiration. When he picks Father up and carries him down to the table bodily, as if it were no effort at all, how it makes us think of the day when we, too, had strength for anything, and oceans to spare!

And our little lassie with the golden curls, has her face set, too, for the hills that lie beyond? God bless her! Why should we tell her a single word of all that may come beyond the sky line of today? She will find that out quickly enough. Now let's make her just as happy as she can be. Let's twine her a chaplet of love and fling it about the snowy-white neck. Let's do everything in our power to help her to be stout of heart and true of soul and happy as the day is long. Let's keep her just as close to us as we can, just as long as we can; all too soon the door of the cage will fly ajar and the bird we have loved so well take its flight beyond our sight.

It is worth while to have the friendship and love of a pure-hearted lassie with ringlets down her back. It makes men and women better to watch the glow of health and hope and happiness which marks every movement. Far more worth while to be worthy the love of one such little one!

The War Stamp

OVER this side of the line we go whistling along, not to keep our courage up—no need of that—but just because we have so much to make us happy. And yet, once in a while, even in this peaceful country, a tug of sympathy does come to the heart for the men and the women bearing the burden of trouble up in Canada.

Now and then a letter comes to me from the Dominion. I never take one into my hand but a throb of something comes into my heart. I know what it is: it is that stamp, the war stamp that every man, woman, and child must pay, over and above the regular postage, to help carry on the awful trouble across the sea. That stamp makes me think of the lonely homes over yonder where there are so many vacant chairs waiting for fathers and boys and husbands—waiting, perhaps always to be waiting. It brings to mind the women tugging on through the lonely days in the home, out in the field and in the shops, doing their best to take the place of those who have gone out for their country. It touches the heart to feel that for more years than we know those neighbors of ours must bend their backs under a load of debt that none of us ever has known—and God grant we never may know!

One good thing will come from that stamp from over the border: it will make us all love and respect the friends who must fasten it to every letter they write, and who are doing it so bravely and cheerily, hoping that somehow good will come out of the terrible struggle. It will tighten the bonds of real brotherhood between us all, men of the Stars and Stripes and men of the union jack. It will bring us to see that when one single man anywhere suffers all the world is sorry. It will make the world better, for God ruleth over all, and He knows how to turn this sorrow into joy.

That Man in His Chair

A GOOD many times I have passed him—that old man sitting out on the porch in his easy chair. I know why he is there. The sunshine comes in warm and cheery, and it will not be many more days that he can enjoy a few hours watching the world pass by.

Sometimes I have gone on the other side and not looked that way to see whether the old man waves his hand to me or not. I am in a hurry; why should I stop this time to speak, or take the trouble even to lift my hat and give back the welcoming salute?

But the last time I did that, something struck me a hard blow. A voice said: "You ought to be ashamed of yourself! Go back and take that old man by the hand. Speak with him, if only for a minute. It will do him good, and you too." And I made up my mind I would do that from this time on. If it rains or if it shines, when it snows and when it blows, if that old man, or any other old man, is sitting out where I can see him, I'll go across the street and look into his eyes, hand to hand, heart to heart.

For that old man has done things. I took up life's tools where he laid them down, and it has been easier for me to do my work because he did his so well. He knows some things I never can know. The years back there had for him hard things which are an old story, bound up now and laid away on the shelf. He left something in forest, meadow, and city that counts and will count for all time. I am proud of him when I think of all he has done.

And it is right that he should be sitting out now in that easy chair. Has he not earned the right to its peace and quiet for the rest of his life? You and I ought to give him all the honor, all the respect, all the love of our hearts, and make the light shine bright along his sundown way. Let's do it!

It is Good

By Chas. B. Driscoll

WITH due respect to lords and kings, owners of yachts and such like things, with deference to Western men who own all lands within their ken, I'd merely like to rise and state that I have not found, up to date, a man whom I'd trade places with. I'm only Farmer Henry Smith, owner of these few cows you see. Pray don't take time to pity me.

A dozen cows, a sunny day, a wife and kid not far away, a clump of woods, an arch of sky, a breeze that sings as it goes by, freedom from debt, landlords, and rent—these things are mine. I am content.

Before You Sleep

GO OUT before you sleep and look the world, God's great beautiful world, in the face. Can you do it without blinking? Well for you and for me if there be no recollection of a deed that left its stain of shame on the soul. But if such a memory does come back, meet it like a man. Tell God about it, and ask Him to pity you and forgive you, for it is God who looks out of the blue.

Before you go to sleep call to account every impulse of the day. "Guilty or innocent?"

Before you sleep take the little ones to your heart, and let them tell you what dreams have come to them during the day. If they have had a hard time, find it out and kiss away the hurt. If they have anywhere caught the vision of something finer and grander than ever came into their lives before, let them whisper it into your ear and know that you are glad.

Did you in a moment when the bars of self-control were down speak a word that left its sting in the heart of the one who is nearest and dearest of all earthly friends? Before you sleep kiss away that hurt. Dear heart! She is so worthy of the best love there is in you! How could you ever go to sleep knowing that her pillow is wet with tears struck from the fountain by your hand? Get right with Sweetheart; then sleep tight through the night watches.

And then? Then be brave enough, true enough, manly enough to bend the knee with the Book on the chair before you. Never will you be really happy, never will you know the peace which passeth all understanding, until this becomes the rule of your life, the crowning event of every day God gives you to live.

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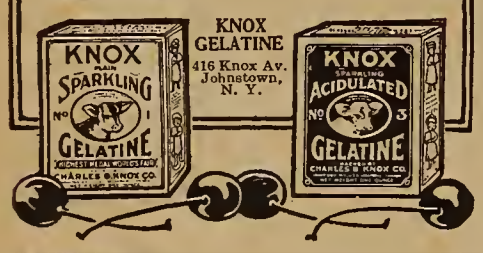

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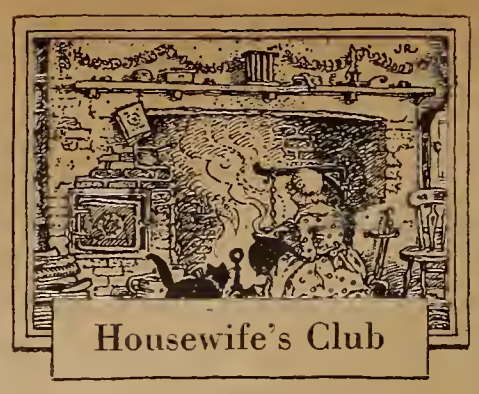


Housewife's Club

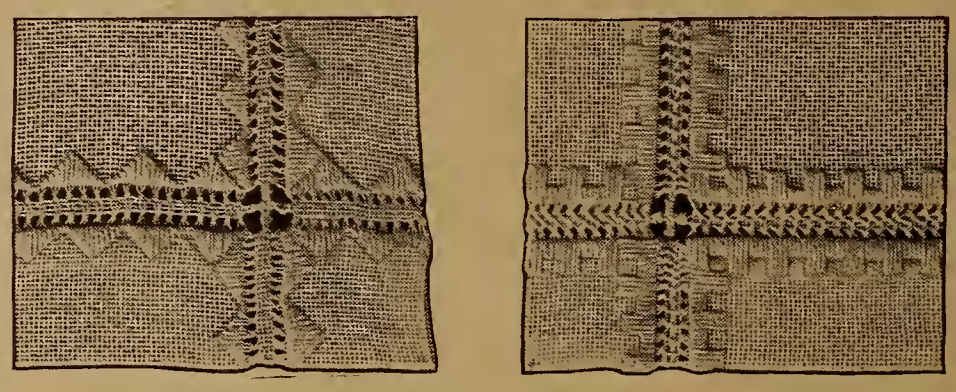
Watch That Water Supply!

By Amy Bigelow

MANY bacteria grow in water. This means that we should be very careful of the water which we drink, in which we wash our fruits and vegetables that are not to be cooked, or in which we brush our teeth.

But how can we protect ourselves, particularly when impure water "tastes good?" you ask. Of course, we all know that every well needs frequent cleaning. Then we need also to call to mind that the water of a well which is lower than a barn, outbuildings, a stagnant pond or stream, or a manured field is dangerous. In most States the health department will test samples of suspected water which is sent them. If you must use water which you are afraid is dangerous, the safest plan always is to boil it. The flat taste of boiled water is due to the absence of air in it. A good way to restore it to its natural taste is to pour it quickly back and forth from one vessel to another. Clean vessels should in all cases be used for this, and for "safety first" the work should be done in a room as nearly as possible free from dust.

New Curtains for Spring—Why Not?



HOUSE-CLEANING is here. And house-cleaning means the fixing over of the old curtains or, better still, the making of new ones. And why not, when the work can be done so easily? These two simple designs are made on marquisette. The curtain to the left shows the wrong side of that design; the one to the right shows the right side of the other design. With this same hemstitching can be made table runners, dresser scarfs, and sideboard scarfs that are distinctive. Every housewife wants something individual to the equipment of her rooms, and these patterns supply just that. The complete directions for these two designs will be sent for four cents in stamps. Address your letter for these or any other fancy-work patterns to Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

Recipes

Divinity Fudge—Boil two cupfuls of granulated sugar, three-fourths cupful of corn syrup, and one-fourth cupful of water until it hardens when dropped in cold water. Have ready the whites of two eggs beaten stiff. Stir syrup slowly into beaten eggs, and beat until it begins to harden. Add one cupful of chopped nuts. MRS. C. C. G., Illinois.

Quickly Made Parker House Rolls—Sift thoroughly, about four times, a quart of flour, three heaping teaspoonfuls of baking powder, and a teaspoonful each of salt and sugar. Rub into this a tablespoonful of very hard butter. Beat an egg very light and mix with two cupfuls of cold sweet milk. Use this to mix the dough with. Roll out one-half inch thick, and cut into rounds. Spread softened butter over each, fold over one half and place in pans, not touching each other. Rub them with sweet milk and bake until brown in a hot oven. These are delicious. MRS. C. G., Minnesota.

Baked Salmon Loaf—One pint of cooked salmon, free from bone and shredded fine, one cupful of bread crumbs, one egg, one tablespoonful of butter, one-half teaspoonful of salt. Mix all together. Take two hard-boiled eggs, fold them in center of loaf, and bake half-hour in moderate oven. This is very nice sliced cold for lunch. Eggs will be in center of each slice, or can be eaten hot with white cream sauce made as follows: One tablespoonful of butter, one teaspoonful of flour, one cupful of milk. Let come to a boil, season with salt and pepper. C. H., Washington.

Doughnuts—Two cupfuls of sugar, two eggs, four tablespoonfuls of melted lard, two cupfuls of sour milk, two teaspoonfuls of soda, flour to roll easy. Fry in deep fat. P. E. H., North Dakota.

Queen of Puddings—One quart of milk, one quart of grated bread crumbs, yolks of five eggs, two-thirds cupful of granulated sugar, grated yellow rind of one lemon, butter size of hickory nut. Put in oven and bake until done. Beat the whites to stiff froth, add one cupful of granulated sugar and the juice of one lemon: put back in oven and brown. For small family use half the quantity.
MRS. F. F. W., Ohio.

Hygienic Baked Beans—Those who have eaten baked beans prepared as follows seldom go back to the time-honored "pork and beans" variety. Soak a quart of beans, preferably navy, overnight, parboil in salted water, drain, put in a large enamel pan or bean pot with one tablespoonful of sugar, one-fourth teaspoonful of mustard, a little pepper, and one teaspoonful of salt. Keep covered with boiling water and a lid, and bake steadily for several hours, or until they take on a yellow tint. Then let the water bake away, and add a quart of sweet cream or very rich milk, and continue baking until it is absorbed and the beans are of a creamy consistency and nicely browned on top. They are delicious hot or cold, and are so delicate that even young children may safely eat them. So prepared, they furnish a very large proportion of digestible protein and should be frequently served by the country housewife who has an abundance of cream at her disposal.
A. E. J., Pennsylvania.

Cake Filling—Six large tart apples, grated, juice and part of the grated rind of one orange, one cupful of sugar, a little vanilla. This filling requires no cooking, just spread between layers of cake.
P. E. H., North Dakota.

Household Hints

To Clean Brass—An excellent way of cleaning brass flower pots or trays is to rub them well with a piece of lemon. Then pour boiling water over them, and finally polish them with a soft dry cloth. You will find that the lemon will remove all the stains from the crevices in the brass. MRS. R. C. A., California.

Home-Made Mattress—A good mattress costs so much that a great many people use straw ticks instead, and especially those who live in the country. But the following mattress is just as good as the kind you buy, and a great deal cheaper. It can be made of ticking, muslin, or calico. Make a tick like the covering to a mattress, with narrow strip set in the sides and ends so it will make a square-shaped tick when filled. Then fill it with straw or corn husks. Next make a cotton comforter, but make it a little heavier than an ordinary comforter, and knot it well. Lay the comforter on top of the straw tick and stitch both together around the edges, and you will have a good mattress with a soft cotton top.
MRS. W. F. F., Ohio.

Concerning Dish-Washing—Where one has no sink, the following method of washing dishes is recommended. Scrape and stack on the table where they are to be washed all the dishes, cooking utensils, etc. Have three dishpans—the first half full of hot soapy water, the second half full of hot clear water, and the third empty. Wash with a dish mop (for the water should be too hot for the hands) first the small pieces, then those that are larger, rinsing each piece as it is washed and placing it in the third pan to drain. Continue until every piece is washed, rinsed, and put to drain. If the third pan will not hold everything, invert the cooking utensils on newspapers to absorb the water. Have a cloth to finish with, such as wiping off table, stove, etc. Empty first pan and use rinse water to wash first two pans; rinse dry and put away. Wash hands and put away dishes, using a clean cloth to wipe off the few drops of water that will be at the bottom of each piece. Rinse dry and put away third pan. MRS. A. B., Missouri.

To Keep Sink Clean—I took a piece of dressed board 10x12x1 inches thick. In each corner I screwed rubber-tipped door stops. It can be moved about and the rubber tips keep it from scratching. I place dishpan on it to use. It is the best yet. K. C. C., Maryland.

New Puzzles

Arithmetical Problem

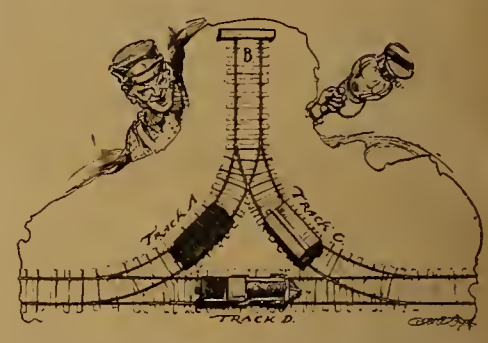
The marble season is now at hand, so the following puzzle is seasonable:

George and Jim, two rival marble shooters, started in to play for keeps when each had the same number of marbles. George won twenty in the first round, but lost two thirds of his stock in the play-off, which left Jim four times as many as George. Can you tell how many marbles each had when they commenced to play?

Switch Puzzle

Here is a knotty problem in railroading: The black and white freight cars can be passed through switch B, which is not long enough to accommodate the engine. By what method can the engine, in the fewest number of reversals, change the positions of the two cars, placing the black on track C and the white on track A?

No trick or flying switches are to be employed, but you will find it a sensible problem in practical railroading which an experienced engineer should solve without hesitation.



The curious feature of this problem is that it was first issued over fifty years ago, and now appears in many of the puzzle books, but the correct answer to the problem is not usually given. In how few moves can the feat be performed?

If some of the younger puzzlists have a toy railroad with interlocking sections of track and switches, which can be put into the position of the track and switches shown in the picture, they can work the puzzle out very handily with these means; but for those who are not so lucky, a track and cars cut roughly out of paper will answer equally well. The main thing is to answer the question, but be sure that you have reduced the number of moves to the fewest, or some cleverer amateur railroader may come along and knock your answer into a cocked hat.

Answers to Puzzles

Puzzles Printed Last Issue

A Quaint Old Rebus

A book.

Some Triple Decapitations

Chair, hair, air. Spout, pout, out. Clover, lover, over.

If Not, Why Not?

If Not, Why Not? contains a catch which thousands of solvers failed to see: Christmas Day and New Year's Day always fall upon the same day of the week; but, although only one week apart, they are not in the same year.

Ever Think Of It?

Some folks go on clogging their systems and drugging themselves day after day with tea and coffee—half sick most of the time. They wonder what balks their plans and keeps them down.

Suppose you stop tea and coffee 10 days and try

POSTUM

You can then learn what a difference it makes in body and brain to quit tea and coffee, which contain the drug, caffeine, and use the food-drink—Postum.

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No. 2959—Girl's Dress with Panel Sides. 4 to 10 year sizes. Pattern, ten cents

No. 2959

No. 2960—Long Coat with Shoulder Capes. 4 to 10 year sizes. Price of pattern, ten cents

No. 2846—Waist. 36 to 46 bust. Pattern, ten cents
No. 2847—Plain Skirt. 26 to 36 waist. Pattern, ten cents

No. 2988—Waist. 36 to 40 bust. Pattern, ten cents
No. 2989—Two-Piece Skirt. 26 to 30 waist. Pattern, ten cents

No. 2846
No. 2847

No. 3007

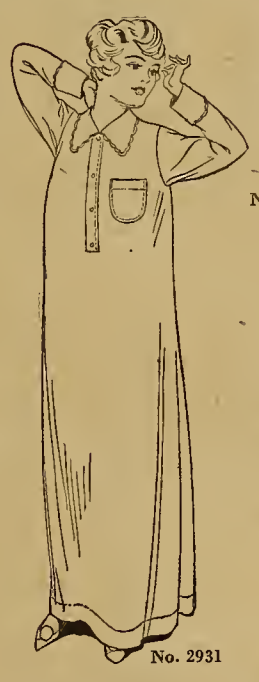
No. 2980
No. 2981

No. 2988
No. 2989

No. 2988
No. 2989

A good model to trim with that "left-over" hit of material

Simple trimming makes this afternoon dress excellent for wash fabrics



No. 2931

No. 2986
No. 2987

No. 3007—One-Piece Apron with Cap. Cut in 32, 36, 40, and 44 bust sizes. Pattern, ten cents

Above is illustrated an ideal gown for the first cool days of spring. Light cloth and satin are good materials. No. 2980—Waist with Sleeves in Underblouse. 36 to 44 bust. Pattern, ten cents. No. 2981—Two-Piece Skirt: Side Insets. 26 to 34 waist. Pattern, ten cents

No. 3007

No. 2980
No. 2981

Back view and high-collar effect of No. 2904

For the woman who likes simplicity a nightgown of this sort is practical. No. 2931—High-Neck, Long-Sleeve Nightgown. 32, 36, 40 and 44 bust. Price of pattern, ten cents

No. 2986 — Costume Blouse with Elbow Puff Sleeve. 36 to 42 bust. Pattern, ten cents. No. 2987—Three-Tiered Skirt: Circular Effect. 26 to 32 waist. Pattern, ten cents

No. 2907

No. 2904

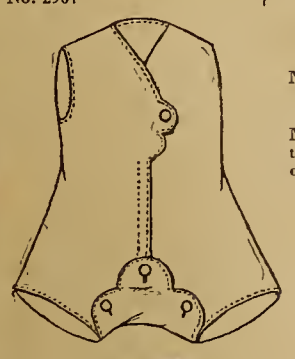
No. 2953

No. 2907—Belted Negligee Jacket. Cut in 34 to 44 bust. Pattern, ten cents

No. 2904—Shirt Waist with High and Low Collar. 34 to 46 bust. Pattern, ten cents. Above is shown the collar buttoned up to the throat

No. 2889—Child's One-Piece Combination 2 to 10 year sizes. Pattern, ten cents

No. 2953—Skirt in Plaited Panel Effect. 26 to 32 waist sizes. Width, three yards. Pattern, ten cents



No. 2889

HOW TO GET THE PATTERNS SHOWN ON THIS PAGE: Send ten cents in stamps for each pattern wanted, with the number of the pattern and your measurements, to the Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

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Here Are Two Charming Styles

35 FF 501—An Exquisite Little Frock of silk Georgette Chiffon and Crepe de Chine. The blouse is of chiffon over a lining and is finished with stitched plaits extending around lower part of waist as pictured. The vest and boned collar are of hemstitched white Georgette Crepe. The waist is elaborated with French veining and the sleeves have two wide tucks and end in cuffs of Crepe de Chine and Chiffon. The Crepe de Chine skirt is shirred and corded at the hip line on each side and is trimmed front and back with self covered buttons. Dress fastens invisibly in front. Colors: Copenhagen blue, navy blue, rose or gray. Sizes 32 to 46 bust measure. 40-inch skirt length; also proportioned to fit misses and small women 32 to 38 bust, 38-inch skirt length.

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Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

When Baby Gets Teeth

OF ALL the excuses for the fact that Baby is fretful the teething excuse comes most frequently. It is given because it is so easy to give. As a matter of fact, the trouble quite ofteu is due to improper feeding rather than to teething.

A baby ordinarily has six teeth at the end of the first year. The coming of these teeth causes very little trouble, as a rule. But as the double teeth commence to come, then there will be some disturbance. If the difficulty is prolonged, oue may feel sure, however, that it is not due to the teeth but to some other ailment, probably stomach trouble.

Patent medicine must be avoided for the baby's sake. Most of the so-called soothing remedies contain opium in some form, and the giving of this is worse for the child than the pain that might follow no medicine at all.

A splendid pamphlet on this subject, in fact one that discusses all features of the care of babies, is entitled "Infant Care." This pamphlet will be sent free of charge to anyone who asks for it, applying to the Chief of the Children's Bureau, U. S. Department of Labor, Washington, D. C.

Adenoids

My boy, aged three years, suffers with a continued cold in his head. Has adenoids, and is subject to tonsilitis when he takes cold. Would you advise having adenoids removed? We live near the swamp lands of Louisiana, and would like to know if a change of climate would be beneficial. How about southern Missouri? J. E. R., Louisiana.

BY ALL means have the adenoids removed, and the tonsils also, if deemed advisable. Southeastern Missouri would no doubt be a slight improvement.

Constant Sore Throat

I have constant sore throat, especially in the morning, which I think is caused by catarrh. I also have rheumatism in the arms. I have sweating spells. My tonsils are not diseased. This sore throat bothers me in summer as well as in the winter. Mrs. M. M., Illinois.

SORE throat and rheumatism go hand in hand. I am not so sure but that there is some trouble with your tonsils which is infecting your whole system, and causing those rheumatic pains in your arms. Have your tonsils removed, or at least examined carefully by a surgeon.

Constipation in Babies

My six-months-old baby has been constipated since he was three months old. He is a good, normal baby, plump but not fat, and sleeps well. Mrs. C. J. P., Virginia.

BEFORE you give any more medicine, try giving your baby a teaspoonful of good cream two or three times daily. Its food is not rich enough.

Too Young to be Old

I am a farmer, aged fifty-five years. I have a slow pulse, a sleepy, tired feeling. Cannot sit down to read without dropping to sleep, am dull, listless, and stupid, with that tired feeling in the morning. W. W. E., Michigan.

WHAT you need is a thorough cleanout to relieve that sluggish liver and carry off the excess of waste matter that is clogging your system and impeding your circulation. Your kidneys are trying to eliminate the waste products, but they need to be aided by the bowels and the skin, and thus get relief from the burden that is oppressing them.

Eat less stimulating diet; cut out coffee if you drink it; get up at 5 A. M. Take two cascara tablets at night, followed by a dose of salts or oil in the morning. At fifty-five you are too young to show the effects of senility.

Varicose Veins

Is there any cure for varicose veins? F. P., Washington.

THE treatment is radical and palliative. The radical treatment is surgical, and consists of the obliteration of the veins by ligature, compression, or by actual dissection and extirpation by scientific antiseptic surgical procedures. There is something that impedes the venous circulation or you would not have dilated veins. Look for some obstruction, such as overloaded, torpid bowels, constricting garters, or whatever it is, and see to its removal.

The palliative treatment consists of making compression on the dilated veins by elastic bandages, evenly and skillfully applied or, better still, by perfect-fitting elastic stockings. For milder cases you might get your physician to apply strips of surgeon's adhesive plaster over the veins sufficiently tight to prevent their engorgement, which gives great relief.

Heart Trouble

I have a boy eighteen years old who is afflicted with heart trouble. He first noticed it after drinking coffee; then his heart beat very fast, and his skin itched dreadfully. Could it be kidney trouble? Is there any cure for it? M. F., Nebraska.

DRINKING coffee sometimes brings on spells of heart trouble and itching like you describe. Unless you can note other symptoms, I have serious doubts about his hav heart disease at all. However, it is always best to avoid coffee in heart disease.

Catching Cold

I am troubled with catarrh of nose and head, and take cold very easy, which often extends to throat and bronchial tubes. Rather poorly nourished. Mrs. S. L. P., Indiana.

ANÆMIC, undernourished, overworked, and worried individuals, and those afflicted with chronic ailments, take cold readily. Keep your feet warm and dry, your sleeping-room well ventilated, and take a two-grain capsule of quinine after meals. Have your sputum examined for tubercular bacilli in order to make sure that you do not have incipient tuberculosis.

Stockings Cause Sores

My two children, a boy and a girl, aged nine and eleven years, are troubled with sore feet from ankles down. They swell a little and are rough and cracked. They wear heavy woolen socks to school, and walk back and forth a distance of four and a half miles. R. E. L., Canada.

THEIR extremely long walk to school causes those heavy black stockiugs to irritate the feet aud set up an eczematous rash. Discard those heavy black stockings at once, and replace with stockings (cotton preferred) with white feet, and no doubt the trouble will cease.

Falling Hair

I had real nice hair until I was sixteen years old, but have had trouble for the last twelve years. My hair gets just so long, and then breaks off until it is so short I can hardly do it up at this time. I also have pimples on my scalp. Miss E. F., Michigan.

ARE you sure you did not injure your hair with the curling irous, or hairpins, or stickpins? The following stimulating lotion for the scalp and hair will probably help: Tinct. cantharides, 2 drams; tinct. capsicum, 15 minims; spts. vin. rect., 1½ ounces; add aq. ros., 5 ounces. Mix, and rub into scalp every other night.

Pimples and Blackheads

I am greatly troubled with pimples and blackheads. Have had them for three or four years. Eat only two meals a day; drink no coffee or tea; keep regular hours. Does eating meat increase the trouble? Does my blood cause the trouble? Are the advertised medicines any good? G. S. M., Ohio.

EVEN aggravated cases of blackheads are completely relieved, when untreated, in the course of time, so do not be discouraged. The contents of the blackhead should be extracted by an ordinary watch key, a curette, a spatula, or the thumb nail—all of these to be disinfected before being used. But if you do not wish to do any of these things, you can get an ounce of green soap and an ounce of cologne water and mix them together. Repeated spongings every third night with this lo' ill at first make them more prom' t, but will slowly operate to dissolve the sebaceous secretion. In answer to your first question, yes; second, not always; third, I do not know.

Chilblains

What can I take to keep from having chilblains, which bother me so much during cold weather? G. W. R., Pennsylvania.

IODIDE of potassium is usually recommended, and I would advise you to take the following: Syrup trifolium Comp., 6 ounces. Take a teaspoonful before each meal. This contains enough of the iodide to be beneficial.

Pin Worms

About Thanksgiving we discovered that our three-year-old boy was suf from thread worms. We immediately called up our physician, who prescribed an injection of a tablespoonful of turpentine to two ounces of olive oil, warm. This was to be retained ten minutes, followed by injections of hot soapsuds, also by a good physic. This is to be repeated once each week. We did this for two weeks, then oftener, and bought three bottles of worm medicine and gave it to him. But he still has some. Mrs. E. W. H., Pennsylvania.

AFTER the excellent advice and treatment given you by your family physician there is little more to be done. You would have done well to have consulted him about the worm tablets. These cases are sometimes very rebellious to treatment. There are so many folds and valves in the intestines within which pin worms may hide that it is sometimes almost impossible to dislodge them. You might try an injection of strong salt solution of a pint or more. The solution must be cold, and the hips well elevated to retain it as long as possible. Repeat for ten days.

Paula of the Movies

[CONTINUED FROM PAGE 30]

herself. Perhaps he thought the water was a trifle too cold on this November day for impromptu plunges.

It was cold, icy, in fact, but that didn't restrain Sam Llewellyn, who needed less time to reach a decision than Mr. Peters required. Droppiug his ax, forgetful that the cameras were churning away as if nothing nntoward had happened, he rushed headlong for the creek, throwing off his coat as he rau.

In half a minute he had Bessie around the waist and was slushing to dry land with her. Ten seconds more and he was kneeling over her on the bank. And here an interesting happening occurred. The play, it seemed, had come abruptly to a stop, and all the performers were hnrrying toward the bridge. Director Carney was among the first to arrive, aud his stormy face boded a tempest as he flourished his megaphone and demanded:

"What in hell do you mean by it? You've gummed up everything! You've—"

"Here," broke in Sam, springing quickly to his feet, "shut up, aud give me that coat!" And thereupon, with no more speech, he removed the natty gray overcoat from Director Carney's back and wrapped it aronnd Bessie.

And now he was hastening with her toward the farmhouse. He heard Carney shout through the megaphone:

"You needn't come back! You're fired!"

And somehow those words were the pleasantest he had heard that day. Bessie, considerably frightened and little the worse for that, was soon quite all right in Mrs. Wright's kitchen. Muffled in several blankets, she sat toasting her bare feet near the oven, sipping hot tea and talking to Sam, who was holding her mnengaged hand and gazing into her hazel eyes as if he saw a glimpse of heaven in each of them.

"But you haven't told me yet, Sam, how yon happened to be with those moving-picture people."

"It's a long story," said Sam, pressing her hand between both of his, "and I guess it'll wait till after we're married." He smiled, but there was a serious note in his voice which caused her eyes to drop before his, as if she were afraid he might read therein too much—too soon.

She asked in a small voice:

"Did I make you lose your job, Sam?"

"You bet!" said Sam. "And you owe me three dollars and a quarter! But I've won a heap more than that, I hope."

Mrs. Wright's youngest son, Benuy, stuck his head in the kitchen door, much excited.

"Hey, there, Sam! George Peters got your job! He's actin' in the pitcher, chasin' that lady with an ax in his hand, and yellin'—"

"Tell him for me," interrupted Sam, "he's my ideal movie star."

[THE END]

W

"How I Was Swindled"

Other Letters Sent to Farm and Fireside

By OUR READERS

City Man a Victim

SOME years ago a street carnival held sway for a week in our town. I went to the grounds each evening during the week, but had resolved not to spend a cent. I kept my resolve up to Saturday evening, when I drew two weeks' pay. Being a foreman carpenter, I naturally received good wages. With my pay and considerable money besides, I sallied [illegible] the carnival, having what is called a "flush" feeling, till I met up with a man having an innocent-looking board about 18 inches square.

It had a dozen 20-penny spikes driven in a circle around the edge of the board, with a nicely pivoted arm reaching within about two inches of the circle of spikes. In one end of this arm was a slim tapering piece of cardboard, about 2½ inches long, acting as a pointer.

There were no watches or jewelry on this board, as is usually the case, but only letters and characters representing the amount you were to be taken in for. I can only remember two of those, which were D. U., meaning "double up," and J. P., meaning jack pot.

I watched the game for a short while, and saw men whom I knew win amounts of from $2 up to $10. And right there was my undoing, because I did not know that these men were paid to do what I failed miserably in doing.

I started by handing in 50 cents. But, lo, when the machine stopped it was on D. U., meaning that I should part with $1 to stay in the game, which I did; and this time it landed on J. P., which was virtually the same as before. Right here it took me some minutes to decide whether I should pay up, doubling the amount already handed over, or drop out, losing the amount paid in and seeing the next man win a good-sized stake.

Unfortunately I decided to stay in the game, with the same result, till I had lost $10. Even then I was so enwrapped that it took all the courage I could possibly muster to back away from that machine. But I did escape, and never inquired whether those that came after me won or lost. PENNSYLVANIA.

Swindled at Eighty

BEING a man eighty years old, I have seen a lot of the world, and was always proud of the fact that I had never been swindled by a "slicker"—until last April. There was to be an eye-and-ear specialist at our county seat and, as I was very hard of hearing, I thought I would have him examine my ears and see if he could help my deafness. But before I went, a white-haired, fine-looking man about sixty-five years old drove up to our house and called for me by name.

Coming in, he introduced himself as Dr. Flowers, 948 East Market Street, Indianapolis, Indiana, Eye and Ear Specialist, and said a near neighbor had sent him from town especially to see me. He examined me carefully, was positive he could cure me, talked fair and square, and asked $35 for a cure, or $10 for six weeks' treatment.

He gave bank men as references, and after an hour or two persuaded me to take the full treatment (three months) at the reduced price of $10. He was to return in one month from that day, and asked my granddaughter to have a chicken dinner for him and he would pay her well.

He took the $10, left two quarts of liquid to inject into my nose and ears, and gave me a written statement that if he did not have me so I could hear a common conversation in three months I would get my money back. Then he went his way, never to return. The treatment did me no good. INDIANA.

The Lost Ring

MR. JONES was resting at the noon hour when an automobile dashed up to his door. A finely dressed gentleman got out and came to the house, asking for a meal. He was accommodated at once. He was quite a smooth talker and in an awful hurry, but he had time to tell Mr. Jones that he had lost a valuable diamond ring somewhere up the road, where he had had trouble with his automobile. He said that it was of great value to him because of the fact that it was a present from his deceased wife. For that reason he said he would pay $500 reward for its return. He also told Mr. Jones that he would be in Anderson for several days at a certain hotel, and if he found the ring to bring it in and get his reward.

In a short time a miserable-looking tramp made his appearance at Mr. Jones's and asked for a "hand-out." Kind-hearted Mr. Jones gave him a fine meal. Before he left he showed Mr. Jones a ring he had found up the road, remarking that he didn't suppose it was of any value. At a glance Mr. Jones knew it was the diamond ring the fine gentleman had lost a short time before. Knowing there was a reward of $500 for it, he became excited and offered the tramp $5 for the ring. The tramp said:

"If it is worth $5, it is worth more."

It finally ended by Mr. Jones giving $100 for the ring. As soon as the ring was in his possession he made all haste to the hotel in the city where the fine gentleman was stopping, only to find that no such gentleman was there, and that the ring was worthless. Thus his $500 reward went glimmering, and he found he had been the victim of two smooth swindlers. INDIANA.

Sold Hen, Claimed Egg

A WOMAN in our town sold her neighbor a nice hen. After buying her the lady sat down to chat a while, and biddy laid an egg in her lap.

But the woman who sold the hen took the egg, saying she guessed it was hers, as the biddy laid it in her house.

KENTUCKY.

Sign-Painting Cost $45

FATHER had often bragged that no man could "beat" him. But one day a fine-appearing gentleman drove up to our gate and called, "Hello! Hello!" Father and the boys, who were in the back yard, came forward to see what was wanted. The stranger addressed Father as follows:

"I am traveling in the interest of a large concern which is advertising its wares in the following way: We look for conspicuous places, one in each township, and endeavor to gain the permission of the owners to have a sign painted on their barns. For these signs, such as I can paint on your barn, we pay $5. I should also like to put my horse in and take dinner with you."

Father thought the matter over and finally consented. The work being done, the agent gave Father the $5, and also a receipt blank which he signed.

Some sixty days later, Father received notice from the bank that his note for $50 was due, and Father then and there had a fit! IOWA.

Buyer Borrowed Money

I WAS on a train, and on going into the dining car was given a seat at a table with a prosperous-looking, middle-aged man, and we were soon engaged in conversation. He was acquainted with a well-known man from my town, and we found several other topics to make up a very pleasant chat.

He seemed to have a good knowledge of farming; in fact, he said he was interested in a large stock farm and was on the lookout for some well-bred calves and a bull.

As I had some nice animals for sale, I told him about them, and he seemed very much interested. Finally he agreed to come and see them.

Several weeks passed, and I had almost forgotten about the man, when he called one day to look over the animals. He seemed pleased with them, and we made a deal which was very favorable to me. He said he was going up to a town a few hundred miles away and would notify me what day I should have them at the station, crated, ready for shipment. He insisted on making a cash deposit of $50, the balance to be paid when the animals were delivered at the station.

He reached for his wallet and, not finding it, began to search his clothes, but it was not to be found. He seemed terribly agitated, and said there was over $200 in it. The last time he remembered having it was at the railroad ticket office in the nearest large city, and he said that possibly he had left it there and the agent might have found it and, if so, it was safe.

Meantime, he was in a bad plight and had to go on to an important business appointment, and asked if I could let him have $25 until he returned to get the calves.

Well, what would *you* have done? This man certainly looked honest, and I gladly gave him the money. I never heard from him again, and letters sent to his address were returned with the information that no such person could be found.

WISCONSIN.

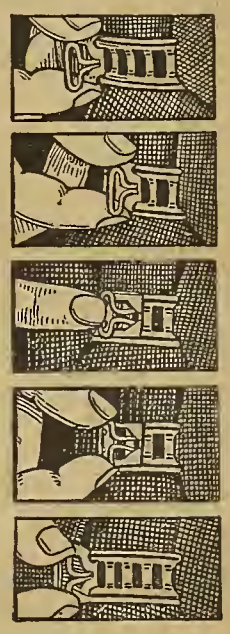
NEW SURE-LOCK BUCKLE for ARCTICS AND RUBBER SHOES

FOR many years rubber overshoes have been fastened with a buckle, the main feature of which was a hinged tongue, held in place by a spring.

This spring did not always work, and the tongue, catching on the clothing or in brush, opened, thus unfastening the overshoe. The new buckle here shown is more direct in its action, more secure, and has no part to catch and fly open. The pictures show the simplicity of action. The wire handle being up, the buckle placed over and into the slot desired, then a downward pressure of the finger on the handle securely fastens it.

The two last pictures show the unfastening. Simply raise the wire handle, and the shoe is undone. They are being largely used on overshoes this year.

The new Sure-Lock buckle for Arctics and rubber shoes operates just exactly the opposite from the old style Arctic buckle. This new buckle goes over the slotted part and fastens in it and not underneath it as in the old-fashioned buckle.



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Mrs. E. Lasch
Zenda, Wisconsin

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The high tariff has been cut right off—the great Melotte comes in absolutely free of duty! *You win! The American farmer can now get the world's best—the grand prize winner of all Europe—at a price $15.25 lower than ever before.* The Chicago price is the same price you would pay if you bought the machine in Belgium, plus $1.75 for water freight.

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1894—Medal of Higher Merit.
1895—Vienna—First Prize.
1897—Brussels—World's Exhibition. First Prize.
1898—London—First Prize.
1900—Paris Gold Medal and First Prize.
1903—London Gold Medal and First Prize.
1904—St. Louis—Gold Award.
1906—Milan—First Grand Prize.
1907—Amsterdam—First Prize.
1911—Brussels—Grand Prize and First Gold Medal.